IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Morris C. Buenemann, Jr. Jack D. Dippold Howard Muldrow Peter W. Robinson Brain Mravic (deceased)	Docket No.:	101960-102
Serial No:	09/329,475	Examiner:	Wyszomierski, G.
Filed:	June 10, 1999	Art Unit:	1742
For:	STEEL BALLISTIC SHOT AND PRODUCTION METHOD		

#9

DECLARATION OF MORRIS C. BUENEMANN, JR. UNDER 37 CFR 1.132

Commissioner for Patents
U.S. Patent and Trademark Office
Washington, D.C. 20231

Dear Sir:

The undersigned, Morris C. Buenemann, Jr., declares as follows:

I Personal Background

1) Since June, 1982 I have been employed by Olin Corporation (Olin)., East Alton, IL, presently as Product/Process Engineer, Winchester Division.

2) I received a B.S. from the University of Missouri at Rolla with a major in Mechanical Engineering.

3) At Olin my work has primarily been research and development work in small arms ammunition for military and civilian applications, primarily in the shotshell area.

4) I devote much time to hunting a wide variety of game, primarily waterfowl and upland game.

5) I hold a number of U.S. patents in the small arms ammunition area:

U.S. Pat. No.	Title
6,016,754	Lead-free Tin Projectile
5,837,927	Reversible Pellet Orienting Wad for Shotshell
5,831,205	Reversible Pellet Orienting Wad for Shotshell
5,347,932	Shot Wad With Highly Collapsible Hinge Portion
5,138,950	Water Resistant Top Wad for Shotshells
4,958,568	Maximum Volume Reifenhauser Shotshell
4,867,066	Shotshell Casing With Reduced Volume Basewad and Increased Interior Volume for Larger Shot Loads

6) I am familiar with the technologies and business/economics of the small arms ammunition industry in general and of the shotshell field in particular.

7) I have had and continue to have direct involvement in the development and marketing of Olin's Winchester brand shotshells. This has included a line of shotshells developed by we the present inventors and now sold under the trademark Xpert.

8) I have read and am familiar with the present application including the claims in their present form and as have been proposed to be further amended.

9) I have reviewed the Office Action dated June 28, 2000 and the references cited therein. By way of background, these references are:

A) The Ervin reference. A photocopy of a display card from Ervin Industries, Inc. (Ervin) shows size, composition, and other information for standard grades of Ervin's Amasteel brand industrial shot. The original was obtained by Olin from Ervin and provided to our attorneys who in turn cited it in an Information Disclosure Statement (IDS).

B) DE 2453881. German Patent 2453881 was uncovered by Olin's attorneys during an extensive search. A translation was obtained and both the reference and the translation were cited in an IDS.

C) JP 2163301. Japanese Patent Publication JP2163301 was first cited by the Examiner. Olin obtained an English translation and has provided the Examiner with a copy.

D) Faires. U.S. Pat. No. 4,173,930 was cited by the Examiner.

E) Blood. U.S. Pat. No. 5,200,573 was cited by the Examiner.

II Technology Background

10) The present invention brings together two distinct fields. The invention relates to the field of shotshell ammunition with which I am and have been intimately familiar. The invention, however, draws from the field of industrial shot production, a field about which I have learned much during Olin's development of the invention.

11) The shotshell art has historically utilized lead shot which has offered an advantageous combination of density, softness and cost. Toxicity concerns have led to massive efforts to find non-toxic substitutes for lead, driven by approximately twenty-five years of legislative and administrative mandates. Perhaps the most significant mandate has been the requirement of the U.S. Fish and Wildlife Service for use of non-toxic shot in waterfowl hunting.

The original Fish and Wildlife Service-approved non-toxic alternative to lead is steel. Steel shot has suffered from reduced effectiveness due to lower density and higher hardness than lead and from a higher cost than a lead. Various other alternatives including tungsten-polymer and bismuth shot were subsequently approved and offer higher performance than steel. These alternatives are much more expensive than steel and have been limited to particular high value market segments.

In terms of manufacturing technology, steel shot for shotshells is typically formed by a "cut wire" process (wire-formed shot). A low carbon steel wire is used for softness. Pieces for manufacturing individual pellets are cut from the wire and may then be die formed into a more spherical shape. Further sphericity or roundness is obtained by rolling the pieces in a groove between counter-rotating plates in a process similar to that which can be used to make ball bearings. At this point, the shot has a Vickers hardness in the vicinity of 200-250 DPH. Annealing reduces the hardness to the vicinity of 100 DPH. Attached as Exhibits A1-A9 are photographs of a number of wire formed shot samples from a number of manufacturers.

There are ongoing efforts to expand the non-toxic mandates. In the upland game area, there is particularly high shell usage and the individual birds are relatively small.

Upland game hunters represent a broader spectrum of hunters than do waterfowl hunters. Many of these hunters are particularly cost-conscious. Also, upland game loads typically involve smaller pellet sizes than do waterfowl loads. However, the per-load cost of wire-formed steel shot increases significantly as pellet size decreases. These factors have made it particularly difficult for non-toxic alternatives to compete with lead in the upland game market. These factors are also present in much of the recreational target shooting market. Although steel has remained the least expensive alternative to lead, it still costs about twice as much as lead on a per load basis and can present additional costs in other components. Accordingly these markets remain dominated by lead and the specter of a non-toxic mandate threatens to potentially drive the cost-conscious consumer from the market.

12) Industrial shot is commonly used in "shot peening" and "shot blasting". In both situations a stream of the shot is sprayed at its target by pneumatic or other equipment. Shot peening of a metal article is a form of cold working of the surface of that article to alter its material. Blasting (as other abrasive uses) commonly involves removing material. Hardness and toughness are generally regarded as advantageous properties for industrial shot. Toughness is important where the shot is reused and therefore must remain intact. What's not terribly important is a high degree of roundness, especially in blasting applications although features such as sharp edges may or may not be desirable. However, shot mass may be important to control the effects of peening or blasting. Thus, shot is commonly size sorted (e.g., as shown in the Ervin reference).

Because of the demand for large volumes of many sizes of industrial shot and grit and because of the tolerance for lack of roundness of the shot, atomization has been highly efficient method for producing the shot material. In a rough example of a manufacturing system, molten streams of steel and water are impinged causing atomization of the former. The atomized molten steel solidifies and forms material having a wide distribution of size and roundness. This is sorted by size and roundness to provide commercial grades of industrial shot. The off-size and out of round material may be crushed and sold as grit (which is also typically size sorted). The results of this process can be seen in the shot in the Ervin reference.

There are at least two key reasons why one would not normally consider using typical industrial shot in ammunition: (a) its lack of uniformity; and (b) its hardness. Also, as seen in the Ervin reference, common commercial grades of industrial shot are generally smaller than common ballistic sizes.

Thus many key sizes of ballistic shot are significantly larger than the common commercial sizes of industrial shot.

Given the high volume of the production of industrial shot grades, we realized that there was further room to skim the cream of the crop of that shot and get material having a higher typical roundness. We saw this as a candidate material for shotshell use. We also realized that the atomization used in industrial shot production also produced quanitites of pellets having sizes larger than standard industrial sizes. These large pellets, ~~may~~ many of which were of appropriate size for ballistic use, would otherwise typically be crushed to make grit. We saw diversion of this material for ballistic use as particularly efficient.

MCB 11-22-00

There is, of course, a complex relationship between the obtainable roundness, the volume of material available at such roundness, and the cost of sorting to obtain such roundness. With this in mind, given the quantity of shot Olin would need for a major product, we ultimately arrived at a proposed level of roundness which might be adequate for shotshell use.

The flight characteristics that such imperfect shot would provide had to be determined as did the effect of its hardness. The candidate material was softened via decarburization, which is a known technique. However given the nature of the material, the resulting hardness was still in excess of typical steel ballistic shot.

13) The shot utilized in the Xpert line (hereinafter Xpert shot) has heretofore been obtained from Ervin and is understood to be a diversion of material from Ervin's existing production system for industrial shot produced to the Society of Automotive Engineers (SAE) J827 (composition) and J444 (size) specifications. The SAE J827

composition is expressly identified in the present application as candidate industrial shot feedstock for obtaining the inventive shot for shotshells.

14) We were able to work out standards for the atomized shot which produced pattern performance which was not significantly different from existing wire-formed shot. In accordance with conventional practice in the industry, the performance was determined by firing loads of shot at paper targets and counting the percentage of pellets which fell within a given circle on the target. Such data is discussed in the present application for a variety of sizes of shot.

As a result of this process, Olin has been able to obtain the atomized shot used in the Xpert line at a cost significantly less than that of wire-formed shot: a cost much more competitive with lead than wire-formed shot has been. This has allowed Olin to price Xpert shotshells well below other steel shotshells. As is noted below relative to comparative advertising by Federal Cartridge Company, some of the cost advantage relative to premium shells such as Olin's Drylok line comes from adopting a fairly basic hull and wadding combination, but the bulk comes from decreased shotload cost.

III Commercial Success

15) The Xpert line was introduced in late March, 1999 as a value-priced line of steel shotshells. Individual products within that line are:

Olin Stock No.	Gauge	Hull Length (in.)	Pellet Size	Load (oz.)
WE126	12	2 ¾	6	1
WE127	12	2 ¾	7	1
WE12H2	12	2 ¾	2	1 1/8
WE12H4	12	2 ¾	4	1 1/8
WE12H6	12	2 ¾	6	1 1/8
WE1232	12	3	2	1 ¼
WE1234	12	3	4	1 ¼
WE207	20	2 ¾	7	¾

Additional shells in this line are in development. Photographs of the atomized shot utilized in the Number 7 and Number 2 Xpert shotshells are attached as exhibits B1 and B2. Photographs of similar Number 1 and BB shot not yet sold commercially are attached as Exhibits B3 and B4.

16) The Xpert line was initially priced approximately 30% lower than other steel shotshells without any substantial compromise in margin. Consumer reaction has been phenomenal. Olin has seen an increase in its sales of steel shotshells by approximately 50%. Sales of Xpert shotshells have accounted for more than 80% of the increase. As previously noted, Olin intends to add additional shot sizes to the line.

17) From its introduction to the present, the Xpert line has had a significant impact on Olin's competitors.

Placement-wise, the Xpert line is a revolutionary product which has sent ripples through the market that have still not subsided.

Olin's main competitors in the steel shot area are Federal Cartridge Company (Federal), which is owned by Blount International, Inc. (Blount), and Remington Arms Company, Inc. (Remington), which is privately held. The reactions of these competitors have included attacks on Xpert shotshells, abortive attempts at introducing competitive products, and accepting a loss of margin. In this regard I note the following:

A) In April, 1999, Remington announced a new product called "Sportsman" priced to match the Xpert line. This was an addition to their existing standard line of steel loads. No technical details were given at that time.

B) In May, 1999, Federal reduced the prices of certain shells within their existing "Classic" steel product line by about 25% to compete with Xpert (which was still about 5% lower).

C) In May 1999, Remington announced postponement of the introduction of their Sportsman steel product and reduced the prices of certain shells within their existing "Wet Proof" line to meet Federal's Classic prices.

D) In May, 1999, we at Olin dropped the prices of certain shells within our own higher-end "Drylok" line approximately 25% to match Federal's Classic prices and dropped the prices of the Xpert line by about another 25% to maintain the nominal 30% price advantage. Even at these reduced prices, due to the cost advantages involved in the inventive shot, we were able to still make a profit on the Xpert line.

E) In the vicinity of July-August, 1999, Federal went on the offensive with advertisements attacking the Xpert line. A copy of an advertisement is attached hereto as Exhibit C. This was a fairly unusual tactic in the industry and, in my opinion, shows the significant impact that our marketing of the Xpert line was having on Federal. The advertisement shows sectional views of both the Federal Classic and Winchester Xpert shells. The advertisement shows the basic shell construction utilized in the Xpert line with a paper over-powder wad and a ~~pair of~~ molded fiber wad behind the shot cup. An emphasis is placed on what Federal identifies as Xpert's "Non-Uniform, Inconsistent Pellet Size". Without regard to Federal's actual knowledge of the performance of the Xpert shotshell involved, the advertisement clearly indicates that Federal believes that readers would assume the size and shape distribution of the Xpert shot to be undesirable. If this were not the case Federal presumably would not have created such an advertisement. This tends to confirm that the actual acceptable performance of the Xpert line is surprising.

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F) In November, 1999, the Blount Securities and Exchange Commission (SEC) Form 10-Q for the third quarter of 1999 reports that Blount's Sporting Equipment Division, which includes Federal, suffered $1.3 million in reduced operating income. The reduction was attributed to "competitive pricing actions" in the market. A copy of the relevant portion of this report is attached as Exhibit D. It is my understanding that the only major competitive actions in the market at that

time were in the area of steel shotshells. By way of comparison, Olin's 10-Q from the same time period, a copy of the relevant portion of which is attached as Exhibit E, shows an operating income increase for the third quarter of 1999 relative to the same period of 1998. In my opinion, this increase was due, in large part, to the Xpert line.

G) In January, 2000, Federal announced a new "Duck and Pheasant" line priced to compete with the Xpert line. The Classic line prices were raised. The Duck and Pheasant line appears to have only recently reached retail channels. Olin has purchased and examined samples of the Duck and Pheasant line. A photograph of the shot from such shotshells is attached as Exhibit F. The shot appears to be wire-formed and has a coating of zinc. In my opinion, Federal suffers significantly reduced margins on the Duck and Pheasant line relative to what it earned on other products prior to the introduction of the Xpert line.

H) In January, 2000 Remington announced (or reannounced) the Sportsman steel line for the year 2000 to be price competitive with Xpert shotshells. This line has reached market, although it was not listed on Remington's web site as of September, 2000. Olin has purchased and examined samples of the Sportsman line. A photograph of the shot from such shotshells is attached as Exhibit G. The shot appears to be wire-formed. The shot appears less round than prior wire-formed shot, indicating that Remington may have reduced the effort spent in rolling the shot. In my opinion, despite any cost savings, Remington is likely suffering significantly reduced margins on the Sportsman line relative to those earned on other products prior to the introduction of the Xpert line.

18) In addition to the positive consumer reaction to the product as evidenced by sales, there has been much positive reaction in the shooting press. The reactions include disbelief and amazement at the price of the Xpert line and approval of its performance. A number of articles regarding Xpert line are attached as Exhibit H. I believe these to be representative of the reaction of the shooting media to the Xpert line. The Examiner's attention is drawn to the following articles:

the L.P. Brezny article in the February/March, 2000 issue of Wildfowl Magazine noted that the performance of the Xpert shotshells did not reflect their low cost;

the Tom Roster article in the March, 2000 issue of Sporting Clays notes effective performance of the Xpert shotshells against clay targets and also notes the lack of pellet uniformity and expresses the opinion that the "less uniform steel pellets also will not pattern as well as more highly spherical steel";

the R.H. VanDenburg, Jr. article in the March, 2000 issue of Shotgun Sports specifically notes that the Xpert line fills the need for non-toxic shot suitable for upland game use; and

the R.H. VanDenburg, Jr. article in the October, 2000 issue of Shotgun Sports notes the excellent patterning results ("high percentages") in view of an unexpected lack of size consistency and the presence of a "few deformed pellets..."

19) I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully Submitted,

Morris C. Buenemann, Jr.

Executed at East Alton, Illinois on 11/22, 2000.

Enclosures: Exhibits A1-A9 Photographs of wire-formed shot
Exhibits B1-B4 Photographs of atomized shot
Exhibit C Federal Cartridge Company Advertisement (2 pages)
Exhibit D Excerpt, Blount International, Inc. SEC 10-Q (11/99)
Exhibit E Excerpt, Olin Corporation SEC 10-Q (11/99)
Exhibit F Photograph of Federal Duck and Pheasant Shot
Exhibit G Photograph of Remington Sportsman Shot
Exhibit H Articles on Xpert Shotshells

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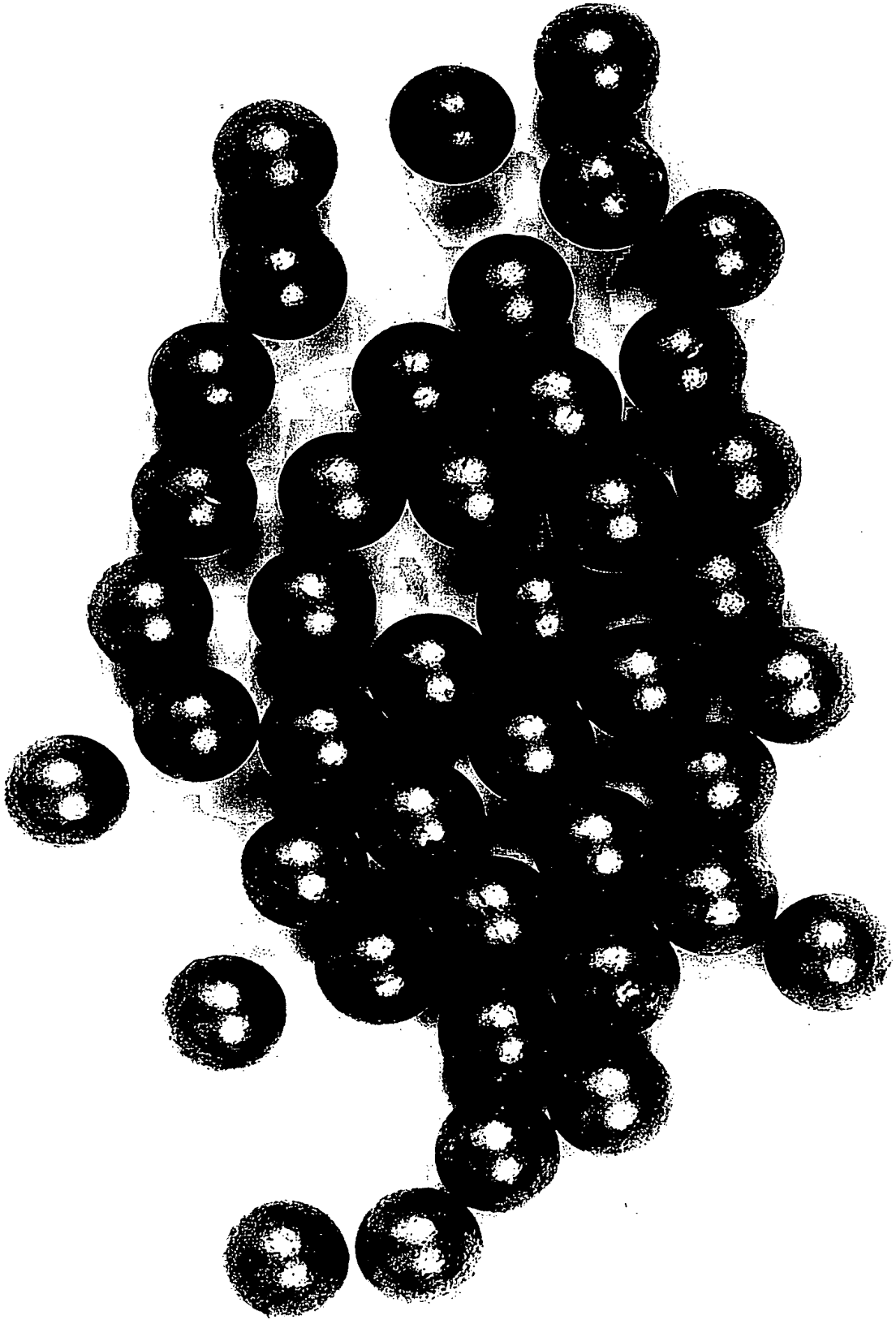
Exhibit A1

Winchester #2 Conventional Steel

Exhibit A2



Federal 12ga. 3" 1 3/8 oz. BBB

Exhibit A3

Federal / Herters #3 Steel

Exhibit A4

R10 Royal #3 Steel

Exhibit A5

Fiocchi #4 Steel / Australia

Exhibit A6

Baschiere & Pellagri

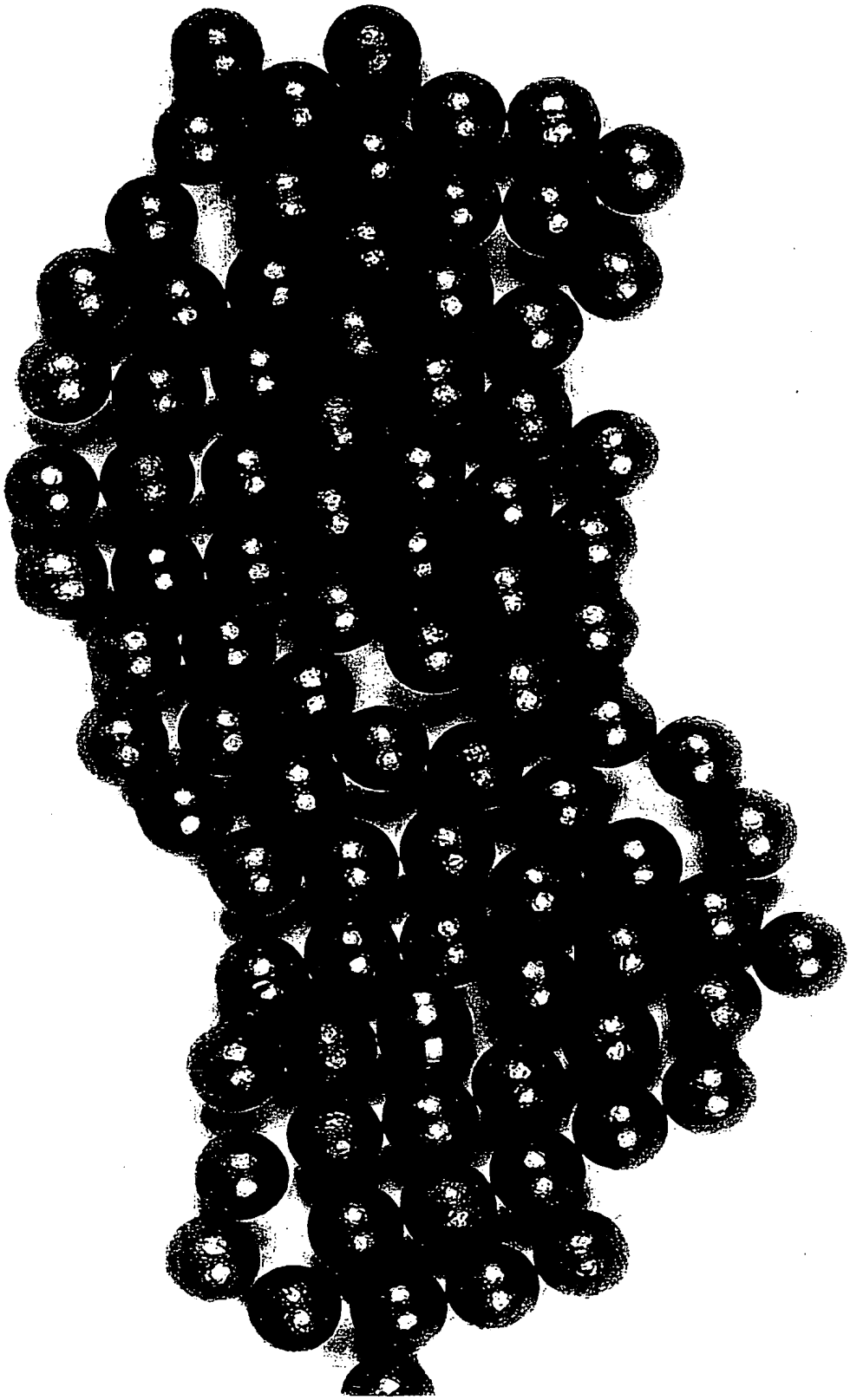
Exhibit A7

Rem. 12ga. 1oz. Promo Steel Shot

Exhibit A8

Fiocchi 7/8 oz. #7 Steel Daisyshot

Exhibit A9



Rem Steel Target Load

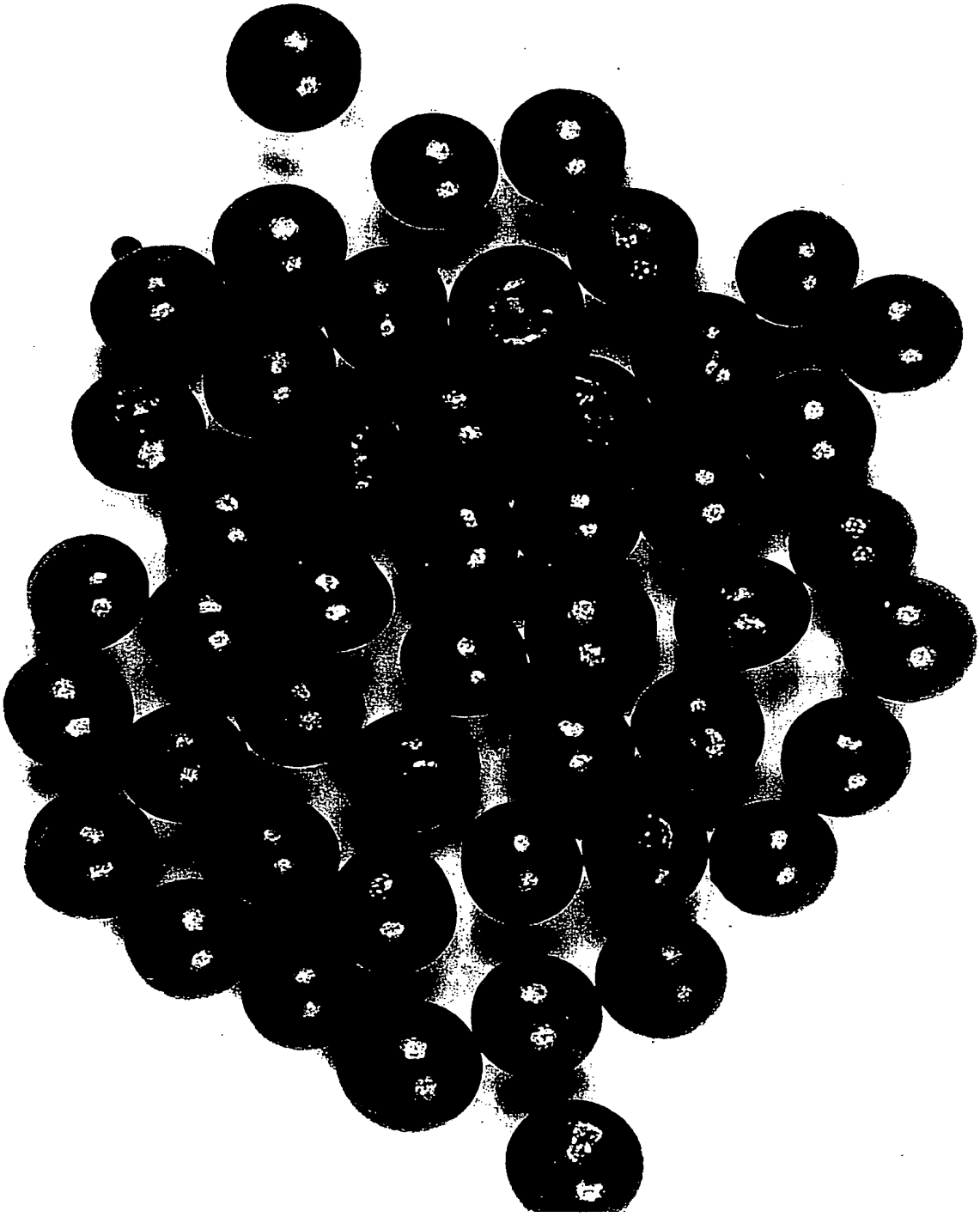
Exhibit B1

Winchester #7 Xpert Steel

Exhibit B2

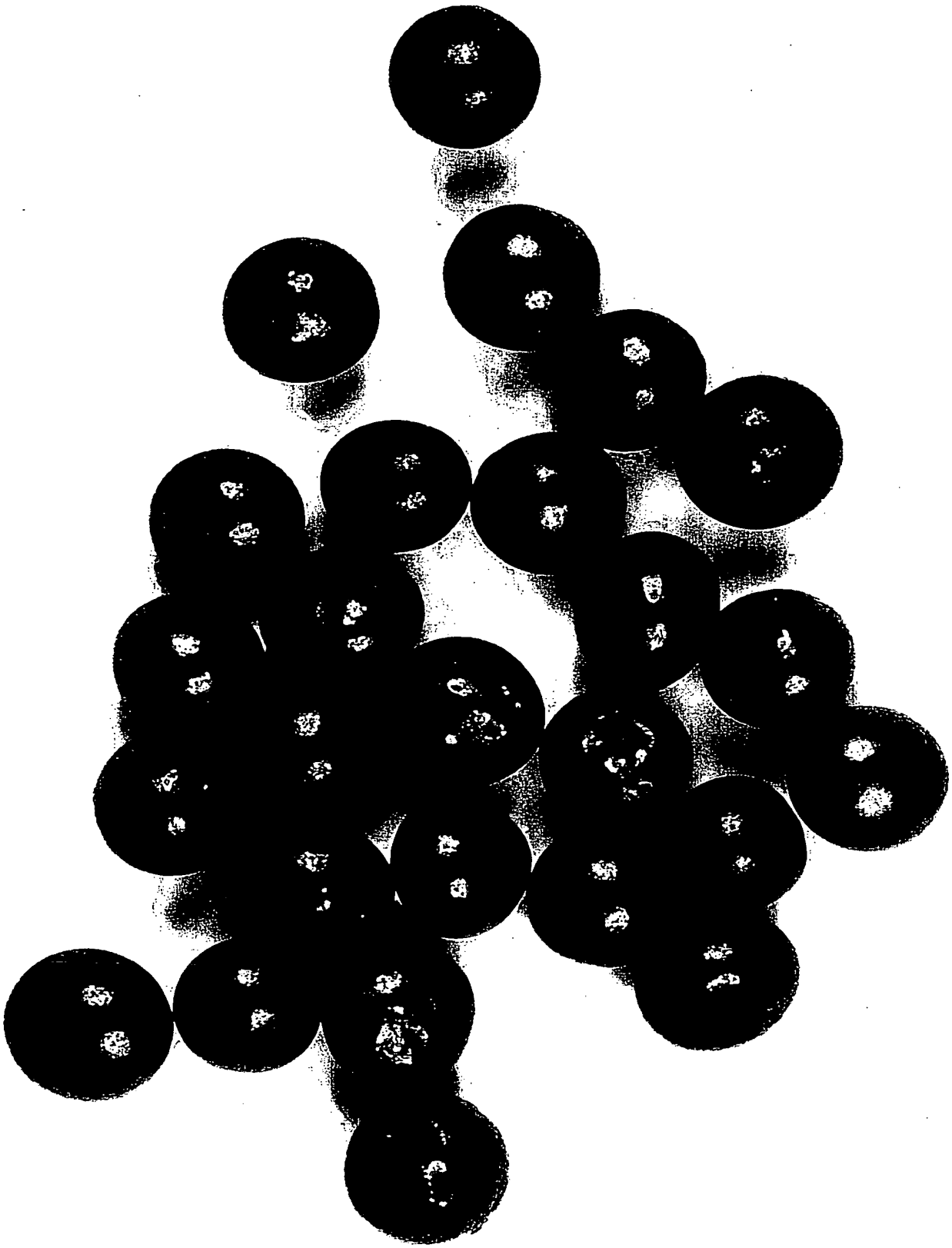
Winchester Xpert #2

Exhibit B3



Winchester Xpert #1 Steel

Exhibit B4



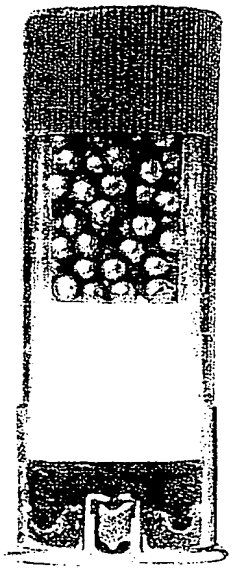
Winchester Xpert BB Steel

Exhibit C

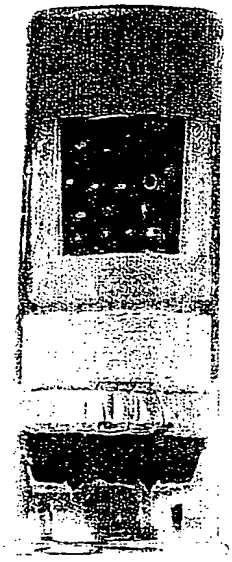
WATERFOWL SHOTSHELL COMPARISON

Federal® Classic® Steel *vs.* Winchester® Xpert

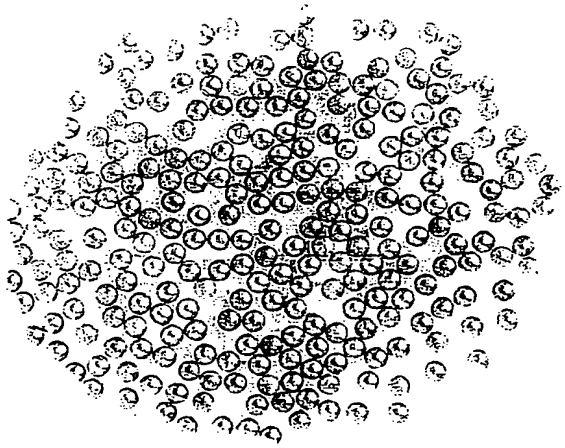
12 Gauge / 2 3/4" - 1 1/8 oz. / Shot Size: 6



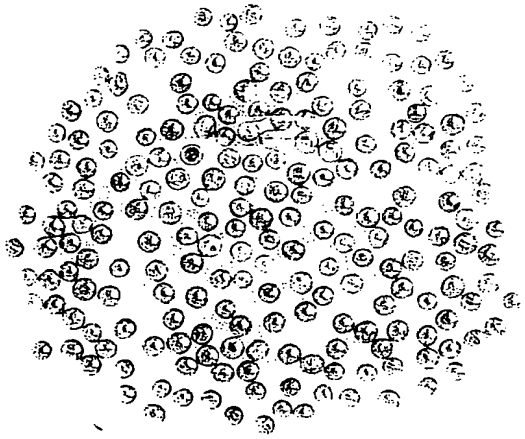
Federal Classic®



Winchester® Xpert



Uniform, Consistent Pellet Size



Non-Uniform, Inconsistent Pellet Size

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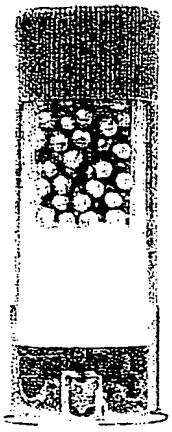
WATERFOWL SHOTSHELL COMPARISON

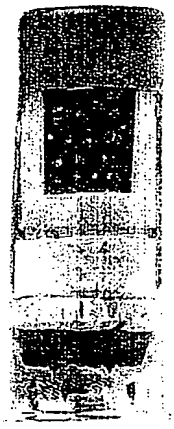
Federal® Classic® Steel

VS.

Winchester® Xpert

12 Gauge
2 3/4" - 1 1/8 oz.
Shot Size: 6


Federal Classic™


Winchester® Xpert

Federal Cartridge WF4786 Shotshell Features	Winchester WE2126 Shotshell Features	What does it mean?
PERFORMANCE		
Published Nominal Velocity (Muzzle) with Remington 1187, full choke: 1365	1300	Federal's higher velocity and better pattern gives more Knockdown Power.™
Primer Output: High	Average	Federal Classic primer output is 35% higher than Winchester's Xpert. Federal's primer performance and reliability are unmatched in the industry.
STRUCTURAL		
Shot Size: 6's	2's - 8's	Federal Classic meets industry standard for pellet uniformity and roundness. Xpert does not. Round pellets produce denser patterns and fly farther.
Cup Material: Nickel & Zinc Plated Steel	Brass Plated Steel	Federal Classic is more corrosion resistant.
Over Powder Wad: 1 piece, pre-slit plastic wad with gas sealing skirt	Paper cards with poor gas seal	Federal has more consistent ballistics for more Knockdown Power.™
Water Seals: 3	None	Seals at crimp, wad and primer make Federal Classic Steel water resistant.
CONFIDENCE		
Product Introduction: 1973	1999	Federal Classic is tried and true. Less risky, more reliable.
Product Availability: 70 items	8 items	Federal Classic offers a full line of steel shot loads.

rate was lower by 26.1% in the first nine months of 1999 as a result of the donation of art and the non-deductible portion of the expenses associated with the sale of the Company. The principal reasons for these results and the status of the Company's financial condition are set forth below and should be read in conjunction with the Company's Annual Report on Form 10-K for the year ended December 31, 1998.

Sales for the Outdoor Products segment for the third quarter and first nine months of 1999 were $82.7 million and $243.2 million compared to $77.8 million and $236.2 million during the third quarter and first nine months of 1998. Operating income was $17.9 million and $53.6 million during the third quarter and first nine months of 1999 compared to $17.4 million and $50.6 million in the comparable periods of the prior year. Sales reflect a higher volume of sales of lawn mowers and accessories and from flat to slightly lower sales of other product lines as indicated in the following table (in millions):

<TABLE>
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	Three Months Ended September 30,			Nine Months Ended September 30		
	1999	1998	% Increase (Decrease) in 1999	1999	1998	% Inc (Decr in 1
<S>	<C>	<C>	<C>	<C>	<C>	<C>
Chain saw components	$ 53.2	$ 50.6	5.1%	$148.1	$148.3	(0.
Lawn mowers and accessories	20.0	17.2	16.3	65.3	56.8	15.
Other	9.5	10.0	(5.0)	29.8	31.1	(4.
Total segment sales	$ 82.7	$ 77.8	6.3%	$243.2	$236.2	3.

</TABLE>

<PAGE>

The improvement in operating income is primarily due to the higher sales of lawn mowers and accessories, $2.7 million and $1.8 million higher sales to Southeast Asia and Europe, respectively, during the third quarter of 1999 than the comparable period of the prior year, and the positive effect of favorable exchange rates of approximately $0.5 million and $2.1 million during the third quarter and first nine months of 1999, respectively.

Sales for the Sporting Equipment segment were up significantly to $98.5 million and $240.0 million in the third quarter and first nine months of 1999 from $94.1 million and $217.3 million in the prior year. Operating income decreased to $13.6 million in the current year's third quarter from $14.9 million for the same period during the prior year. For the first nine months of the current year, operating income improved to $28.7 million from $24.3 million for the same period of the prior year. These results reflect a higher volume, particularly for ammunition and related components and other products, partially offset by competitive pricing actions required during the quarter in one of this segment's products. Sales by the segment's principal product groups were as follows (in millions):

<TABLE>
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	Three Months Ended September 30,			Nine Months Ended September 30		
	1999	1998	% Increase in 1999	1999	1998	% Inc in 1
<S>	<C>	<C>	<C>	<C>	<C>	<C>
Ammunition and related products	$ 71.6	$ 70.5	1.6%	$176.6	$164.4	7.
Sports optical products	13.3	13.6	(2.2)	30.0	26.6	12.
Other	13.6	10.0	36.0	33.4	26.3	27.
Total segment sales	$ 98.5	$ 94.1	4.7%	$240.0	$217.3	10.

</TABLE>

Additionally, in the second half of 1998, the sporting equipment segment completed certain cost reduction activities by consolidating its raw materials purchasing and sales and marketing organizations, transferring certain production to lower cost facilities and eliminating certain outsourcing. The estimated annual savings from these efforts are approximately $3.7 million, approximately $2.6 million of which was realized in operating income in the first nine months of 1999.

The Company's industrial and power equipment segment is a cyclical, capital goods business whose results are closely linked to the strength of the forestry industry in general. A key indicator of this segment's market is the price of Northern Bleached Softwood Kraft ("pulp") which declined 17% from an average of $598 per ton in the fourth quarter of 1997 to an average of $498 per ton in the first nine months of 1999 ($460 per ton in the first quarter, $500 per ton in the second quarter, and $533 per ton in the third quarter), resulting in the depressed market conditions characterized by sales declines of over 50% in the Company's most important market (the Southeastern United States) and the need to offer discounts in response to extremely aggressive competition for available sales. Operating results for the Industrial and Power Equipment segment were adversely affected by these poor market conditions in the third quarter and first nine months of 1999. Sales by the segment's principal product groups were as follows (in millions):

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	Three Months Ended September 30,			Nine Months Ended September 30		
	1999	1998	% Decrease in 1999	1999	1998	% Dec in 1
<S>	<C>	<C>	<C>	<C>	<C>	<C>
Timber harvesting and loading equipment	$ 31.6	$ 46.7	(32.3)%	$ 85.1	$155.4	(45.
Gear components and rotation bearings	6.8	8.0	(15.0)	19.6	22.5	(12.
Total segment sales	$ 38.4	$ 54.7	(29.8)%	$104.7	$177.9	(41.

</TABLE>

This segment incurred an operating loss of $0.7 million and $5.7 million during the third quarter and first nine months of 1999, respectively, compared to operating income of $5.6 million and $24.1 million during the comparable periods of 1998, primarily due to the sharply reduced demand and manufacturing problems at the Prentice facility which adversely impacted our ability to ship products in the quarter and increased costs. In response to the weak market conditions, the Company has implemented a program of production consolidation and realignments in this segment to lower costs and improve productivity. Manpower has been reduced by 21% from a year earlier. One manufacturing facility was closed during the first half of 1999 with its production shifted to other Company plants. Another small facility was closed during the third quarter of 1999 with its production outsourced. Costs of approximately $1.0 million and $3.0 million related to these plant closings were charged to operations during the third quarter and first nine months of 1999, respectively. Management anticipates an annual cost savings of approximately $3.7 million beginning in the third quarter of 1999 as a result of these actions. With recent pulp price increases, low pulp inventory levels, increased demand for pulp and pulp products from the recovering economies of Southeast Asia and an improved order backlog, management is cautiously optimistic of an improvement in the near future in this segment, although the extent and timing of any improvement is highly uncertain. If the current slowdown continues, it would be unlikely that this segment could achieve historical levels of sales and profitability.

The Company's total backlog increased to $100.8 million at September 30, 1999, from $61.3 million at December 31, 1998, and $73.8 million at September 30, 1998, as follows (in millions):

THREE MONTHS ENDED SEPTEMBER 30, 1999 COMPARED TO 1998
Sales and operating results were lower than 1998 primarily due to lower ECU pricing, offset in part by higher volumes and cost reduction initiatives. The Chlor Alkali industry continued to experience one of the worst pricing cycles in the history of the business. Average ECU prices in the third quarter of 1999 were approximately $210, compared to $335 in the third quarter of 1998. In addition to the lower pricing, higher equity losses in 1999 from the Sunbelt joint venture due to the decline in ECU prices, contributed to the decline in operating results.

NINE MONTHS ENDED SEPTEMBER 30, 1999 COMPARED TO 1998
Sales and operating results were lower than 1998 primarily due to lower ECU pricing, offset in part by higher volumes and cost reduction initiatives. Average ECU prices for the first nine months of 1999 were approximately $215, compared to $350 in 1998.

METALS	Three Months Ended September 30,		Nine Months Ended September 30,	
($ in millions)	1999	1998	1999	1998
Sales	$193.6	$199.6	$566.8	$607.3
Operating Income	15.9	8.7	55.6	41.0

THREE MONTHS ENDED SEPTEMBER 30, 1999 COMPARED TO 1998
Sales decreased 3% due to lower metal values and the shutdown of the rod, wire and tube businesses at Indianapolis, IN in the fourth quarter of 1998, offset in part by increased volumes from brass strip operations and the A.J. Oster Company ("Oster"). Demand remained strong for the majority of the Company's markets. Strip shipments to the automotive and coinage markets exceeded last year's levels, while increased demand from the distribution market improved Oster's performance. The electronics market, although rebounding in the Far East, was below 1998 levels while the ammunition and housing markets remain at 1998 levels. Operating income improved from 1998 due to higher volumes, cost reductions and the successful shutdown of the unprofitable rod, wire and tube businesses.

NINE MONTHS ENDED SEPTEMBER 30, 1999 COMPARED TO 1998
Sales decreased 7% due primarily to lower metal values and the shutdown of the rod, wire and tube businesses, more than offsetting higher strip volumes. Strong demand from the automotive, coinage and ammunition markets resulted in higher brass strip volumes. Strip shipments to the electronics and telecommunications markets were below last year's levels. Operating income improved due to the shutdown of the unprofitable rod, wire and tube businesses, favorable sales mix, and lower administrative and operating expenses. Oster, which experienced a slowdown in the early part of the year, has recovered over the last two quarters, but on a year-to-date basis is below 1998 profit levels.

WINCHESTER	Three Months Ended September 30,		Nine Months Ended September 30,	
($ in millions)	1999	1998	1999	1998
Sales	$95.5	$88.5	$212.4	$197.4
Operating Income	9.6	8.3	15.3	9.3

THREE MONTHS ENDED SEPTEMBER 30, 1999 COMPARED TO 1998
Sales in 1999 were 8% higher than 1998 due to higher volumes of commercial ammunition, which more than offset lower selling prices in some product lines and a decline in military sales. Operating income improved significantly from 1998 due to higher sales volumes and lower commodity costs.

NINE MONTHS ENDED SEPTEMBER 30, 1999 COMPARED TO 1998
Sales in 1999 were 8% higher than 1998 due to higher commercial ammunition volumes partially offset

by lower military sales and lower selling prices in some product lines. Operating income improved significantly from 1998 due to higher sales volumes, manufacturing cost reductions and lower commodity costs which more than offset lower management fees from the Lake City Ammunition Plant due to a reduction in volumes.

Winchester is the operator of the U.S. Army's Lake City small caliber ammunition plant in Independence, MO. The current five-year contract expires at the end of this year and represents approximately $5 million in annual pretax profits. The Company was one of several bidders for a new ten-year, fixed price contract to commence at the end of the existing contract with Olin. On July 30, 1999, the Department of the Army awarded this contract to a competitor. Olin has filed a protest to this award. A decision is expected during the fourth quarter of 1999. If the Company ultimately loses the contract award, it will continue operating the plant until at least the end of the first quarter of 2000.

1999 OUTLOOK

Although Chlor Alkali prices remained at depressed levels during the third quarter, price increases announced in the third quarter are expected to improve the Company's ECU prices in the fourth quarter, with additional improvement likely next year as well. For the remainder of the year, demand is expected to remain strong in most brass strip segments of our business, primarily automotive, housing, ammunition and coinage. Some improvement is expected in the electronics segment. With rising ECU prices and continuing strong performance from Metals and Winchester, the Company expects that its fourth quarter earnings per share will be in the 15 to 20 cent range.

DISCONTINUED OPERATIONS

On February 8, 1999, the Company completed the Spin-Off of its specialty chemicals businesses as Arch Chemicals, Inc. ("Arch Chemicals") (the "Spin- Off"). Under the terms of the Spin-Off, the Company distributed to its holders of common stock of record at the close of business on February 1, 1999, one Arch Chemicals common share for every two shares of Olin common stock. For the first nine months of 1999, net income includes one month of operating results of

the specialty chemicals business while the comparable nine-month period in 1998 includes nine months of operating results.

ENVIRONMENTAL MATTERS

In the nine months ended September 30, 1999 and 1998, the Company spent approximately $10 million and $14 million, respectively, for investigatory and remediation activities associated with former waste sites and past operations. Spending for environmental investigatory and remedial efforts for the full year 1999 is estimated to be $25 million. Cash outlays for remedial and investigatory activities associated with former waste sites and past operations were not charged to income but instead were charged to reserves established for such costs identified and expensed to income in prior periods. Associated costs of investigatory and remedial activities are provided for in accordance with generally accepted accounting principles governing probability and the ability to reasonably estimate future costs. Charges to income for investigatory and remedial activities were $12 million for the nine months ended September 30, 1999 and 1998. Charges to income for investigatory and remedial efforts were material to operating results in 1998 and may be material to net income in 1999 and future years.

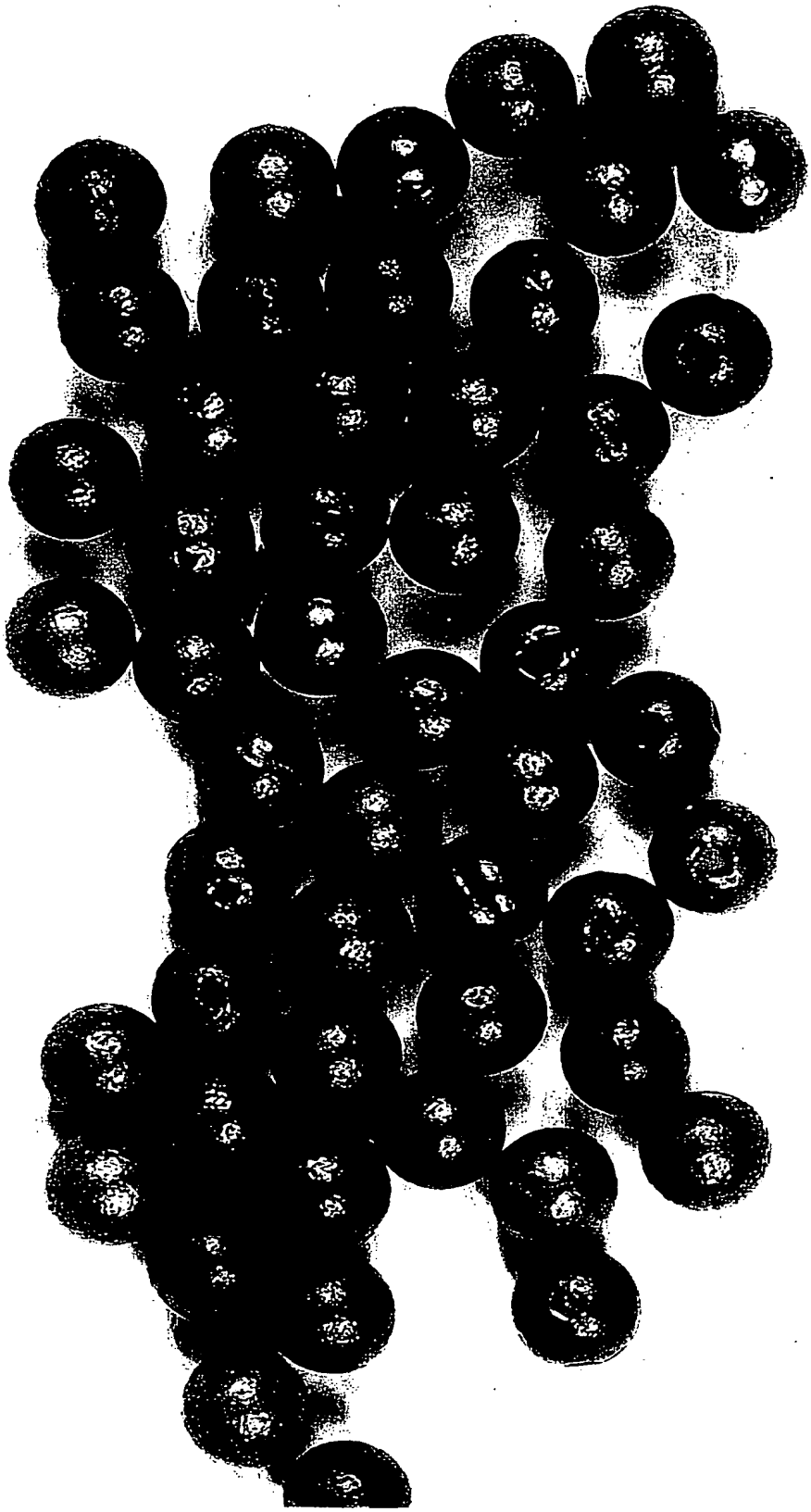
The Company's consolidated balance sheets included liabilities for future environmental expenditures to investigate and remediate known sites amounting to $131 million at September 30, 1999 and $129 million at December 31, 1998, of which $106 million and $99 million were classified as other noncurrent liabilities, respectively. Those amounts did not take into account any discounting of future expenditures or any consideration of insurance recoveries or advances in technology. Those liabilities are reassessed periodically to determine if environmental circumstances have changed and/or remediation efforts and their costs can be better estimated. As a result of these reassessments, future charges to income may be made for additional liabilities.

Annual environmental-related cash outlays for site investigation and remediation, capital projects, and

Exhibit F

Federal Duck & Pheasant
#2 Steel

Exhibit G



Remington Sportman's #2 Steel

Exhibit H

1) Good News From Winchester - Xpert Steel Shot
L.P. Brezny, "Outdoor News", August 27, 1999, page 34.

2) Winchester's New Xpert Shotshell Line
"Outdoorsite.com", November 1, 1999.

3) Why are Winchester Xpert Steel Loads Less Expensive?
Mark Mazour, "Outdoorsite.com", November 1, 1999.

4) New, Less Expensive, Steel Shotshells!
Nick Sisley, "Skeet Shooting Review, December 1999, page 15.

5) Winchester Shotshells 2000 A Field Review
L.P. Brezny, "Wildfowl magazine", February/March 2000, page 47.

6) Non-Toxic Shot and the "Dead Zone"
L.P. Brezny, "Minnesota Waterfowler", March 2000, page 47.

7) Winchester's New Inexpensive Steel
Tom Roster, "Sporting Clays", March 2000.

8) Steel Shot Upland Loads in the 12 Gauge 2 ¾" Shell
R. H. VanDenburg, Jr., "Shotgun Sports", March 2000, page 67.

9) Winchester's X-pert Steel
"Shooting Sportsman", March 2000.

10) Double Time
Ron Spomer, "Sporting Classics", July-August, 2000, page 96.

11) Winchester Xpert Steel Shotshells
Joe Arterburn, "Cabela's Outfitter Journal", August, 2000, page 126.

12) Browning & Winchester Writer's Seminar
R. H. VanDenburg, "Shotgun Sports", May 2000, page 88.

13) Know Your Shotshells
R. H. VanDenburg, "Shotgun Sports", October 2000, page 95.

Good news from Winchester—Xpert steel shot

By L.P.Brezny

If you want a box of steel shot loads for 35 percent under the going rate that shoots well at the normal working range, then there's some good news for you this fall.

The name of the new game is Xpert Steel, and the outfit making up the rules is Winchester-Olin. Winchester recognized the need for a non-toxic shotshell that could do the job and keep the cost of each load more affordable than most current steel shot offerings. For years, hunters have complained that any steel load was high-priced, and lost were those grand old days of lead shot loads found in most discount sporting goods departments.

While I'm of the school that didn't think cheap lead shot ammunition was good for dropping big tough mallards in the first place, Winchester's new Xpert Steel wrapper reacts far more like a higher grade iron shot load than a low budget lead load.

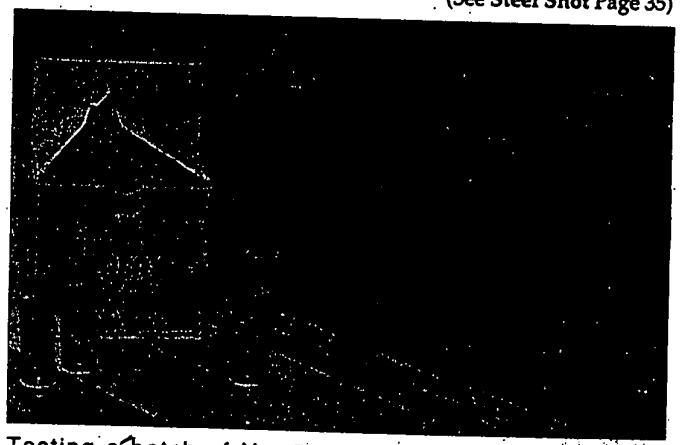
Different components

Right off, Xpert steel shot ammunition won't meet the quality of Super X Drylok, or Supreme, Winchester's two top end steel shot loads. That performance curve just won't happen in this lifetime because the loads aren't at all the same in terms of payload speed and pattern ability. Supreme is a very fast, 1,450 fps package in heavy waterfowl shot, and Super X Drylok uses a special two-piece wad that keeps spent gas away from the shot cloud at the muzzle. Xpert is built from the hull up as a load that is not traditional in terms of a market steel shot load, but unique unto itself.

Xpert steel shot is a development unique to Winchester in that it is manufactured not by cutting wire and rolling it into hard round balls, but rather casting each pellet from molten steel. This hot molding method reduces steps in the manufacturing process and therefore cuts production cost. Now, add a low cost low brass hull to the equation—that's not totally watertight—and you save some more cost per round.

Xpert employs a three-piece wad that uses a good deal of common cardboard as an over powder cup, and filler wad, topped off with a heavy plastic shot cup. Now you have a well-

(See Steel Shot Page 35)



Testing a batch of No. 7s on crows, the author found Winch st r's new Xpert budget line produced good patterns, soft recoil, and good field results.

Photo courtesy of L.P. Brezny

Steel Shot

(From Page 34)

designed payload container, a ballistic masterpiece that will produce solid patterns close to what Dryloks wad produces, but at less material cost.

By cutting costs several times, new Xpert steel shells can be marketed for as low as $5 per box in the upland version of Xpert steel. Yes, I have indicated the "upland" shotshell because Xpert is designed as an all- around load where and when the law requires non-toxic shot.

The first test loads that arrived in my shop were No. 7s. Right off, I found that velocities in a five shot run over my chronograph at four feet from the muzzle was 1,212 fps. This is normal for a light upland game load. Quality control is high with these factory-rolled non-toxics.

On a 40-yard pattern board in a 30-inch circle, the new Xpert No. 7s shot a very uniform 78 percent average for five rounds. This didn't surprise me because I have known for a long time about the simple card board gas seal used in some outstanding old Winchester loads. Seeing that system return in the Xpert shotshell line caused me to smile a bit prior to shooting the new shotshells. The bottom line: Xpert loads will get the job done afield.

Live targets

After getting an idea on paper, I took the loads afield for silo ducks (barn pigeons), and black mallards (crows). While not heavy-weight, hard target, they were good test subject for the lightweight No. 7s, which transfers an energy comparison to a lead shot pellet of about No. 9. Even with the small pellet size, the loads performed well on pass-shot crows and darting pigeons.

Removing some of the shot from an unfired round, I found the new cast steel very well formed and of uniform size. In fact, I couldn't tell the new cast shot from other No. 7 cut/rolled steel shot I had on hand, and I'm wondering if Winchester will pass on the new process to other shotshell load variations in the future.

This fall Winchester will offer the new Xpert loads in 12 and 20 gauge loads for upland and waterfowl. Shot sizes will include No. 6 and 7 in the light upland loads. The 20 gauge fodder will be offered in a 2¾-inch, ¾-ounce load of 7s, and the 12 in a 1-ounce configuration of both 6s and 7s. In a heavier upland/waterfowl 2¾-inch 12 gauge load, 1⅛ ounce No. 2, 4, 6 steel shot sizes will be available.

As a final load this season a 3-inch, 12 gauge hull packed with 1¼ ounces of cast steel will be offered in both 2s and 4s. That rounds out the current offering in the new price-friendly Xpert shotshells.

As to the new 3½-inch 12s and 10-gauge fodder, nothing is on the drawing board at this time. In most cases, these heavy weight game loads are left to the more advanced lines within ammunition companies.

Pattern shot at random using each of the test shotguns produced very workable results when using factory installed choke tubes and also after-market special chokes. In general, modified choke produced the best patterns for gunning work inside the 35- to 40-yard mark. I'm basing this observation on the No. 7,1-ounce load only.

Price will dictate the winners in the race to sell non-toxic shot to hunters. With Xpert, Winchester appears to have an edge in the low price, iron shot market for 1999.

Fellegy

.....continued

Why are Winchester® Xpert® Steel Loads Less Expensive?

By Mark Mazour

The new Xpert loads were especially designed for upland hunting and target situations where non-toxic shot is required. One reason for the lower price is the proprietary process that Winchester has developed to make the actual steel pellets. So far, little has been said about this process, as Winchester is obtaining a patent for its manufacture. All we know is that it is different than the costly method of manufacturing traditional steel shot. The traditional process used in Winchester's Drylok loads, is a "cut wire" process. Each pellet is ground down from a piece of cut steel wire. This process is both costly and time consuming, causing the high retail prices we see for steel shot loads.

As you will see in the charts below, Xpert Steel is offered in 12 and 20 gauge loads for upland game, target shooting, and waterfowl hunting. The Winchester staff and a group of outdoor writers used these loads in South Dakota for doves and upland game, and they were happy with the results.

Upland/Target Xpert Steel Loads

Gauge	Shell Length	Shot Weight	Velocity	Shot Size
12	2-3/4"	1 oz.	1300 fps	6,7
20	2-3/4"	3/4 oz.	1300 fps	7

Heavy Upland/Waterfowl Xpert Steel Loads

Gauge	Shell Length	Shot Weight	Velocity	Shot Size
12	2-3/4"	1-1/8 oz.	1300 fps	2,4,6
12	3"	1-1/4 oz.	1300 fps	2,4

Although the shells were mainly designed for upland game hunting in non-toxic shot areas, Xpert Steel is also an effective waterfowl load. I spoke with Kevin Howard, of Winchester's Public Relations, and he was very pleased on the load's performance on decoying geese in Canada. They used the 3" load with #2 shot and "hammered the geese" on a successful field hunt. Winchester expects to develop a strong following of people to purchase these loads, looking for a more economical steel shot load for waterfowl. **more.....**

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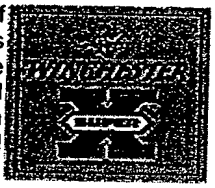
Why are Winchester® Xpert® Steel Loads Less Expensive?

By Mark Mazour



In using Xpert Steel for waterfowl, you should be aware of the load's actual construction. These are not Drylok loads designed specifically for waterfowl hunting under the toughest conditions. Drylok loads feature a lacquer sealed primer and a two-piece wad system for dependable ignition in any condition. As most water would enter a shotshell through the crimp, Drylok shells prevent this moisture from contaminating the powder by the use of an exclusive two-piece double seal. This plastic base wad flares out under pressure to ensure a positive seal for the powder. I can attest to its effectiveness, as many of my shells have been soaked in water and still fire every time.

Xpert Steel is put together with different components than Drylok Super Steel. Xpert loads do not have lacquer sealed primers and incorporate a fiber base wad that is not waterproof. If moisture were to enter the shell, there is a chance of a misfire, due to wet powder. This unique construction has allowed Winchester to use lower cost components to offer these new loads at substantially lower prices. Xpert Steel is still an effective waterfowl load, but it is important to "fit the tool to the job" and use them in dry conditions. As you will see below, the ballistics for the Drylok shells are very similar to the Xpert loads.

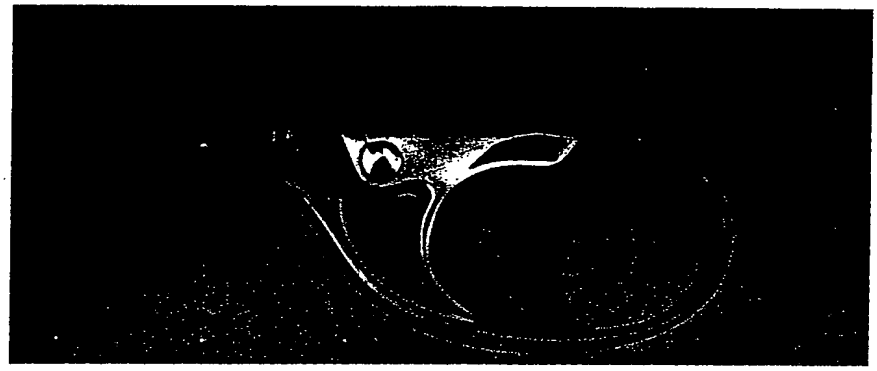
Drylok Super Steel Waterfowl Loads

Gauge	Shell Length	Shot Weight	Velocity	Shot Size
12	2-3/4"	1-1/4 oz.	1275 fps	BB,1,2,3,4,6
12	3"	1-1/4 oz.	1375 fps	BB,1,2,3,4

I hope this article has cleared the air a bit about the new Xpert Steel loads you have been seeing on the market. If you have any questions, feel free to email me, or contact Winchester Ammunition at www.winchester.com.

Mark Mazour - OutdoorSite PRO Staff

The Claremont receiver, showing case coloring and fine engraving.



Close up of the Claremont's big trigger, barrel selector above, trigger group removing lever behind.

feel once it's in the shooter's hands. Prather told me, "The Claremont has wide appeal. It's now being specially configured by experts—those who might shoot competition trap, skeet, sporting clays or flyers."

For those who prefer longer 30 inch barrels for skeet, plus like a light skeet gun to begin with, then tube up with maybe Ultralight 10 ounce Briley tubes, the final weight of a skeet-tubed Claremont is going to be 8 pounds 6 ounces. While most prefer a much heavier skeet gun for the long haul, there are those who definitely favor the lighter models, especially maybe smaller stature or younger shooters. The jury is still out on how the Claremont is going to hold up long term (since its relative recent introduction), but this looks like a very strong, beefed up light shotgun to me. It will also make a top choice in a high-grande hunting gun for a number of different species.

BUTT STOCK SLIPPING ON YOUR SHOULDER?

I have been thinking about changing the recoil pads on my skeet guns because they slip on my shoulder every now and then. This doesn't happen often, maybe once every 100 or 200 rounds. Most often it slips after the first shot on a doubles target, making the second bird all the more difficult. NSSA member Jack Linetty told me about a much less expensive cure. Although recoil pads don't cost the figurative arm and leg, they do require special fitting. A knowledgeable stock person is recommended for this, lest you do some serious damage to your fine skeet gun's stock. Linetty's cure, which he said he got from someone else, is to simply rub the recoil pad with isopropyl alcohol. He dabbed some on his fingers, rubbed it on two of my recoil pads, and it made a world of difference. Now the pad sticks to my shooting shirt—almost like glue. I suspect the alcohol rub on the pad won't last forever, so it will pay to do this maybe every couple hundred rounds. Linetty carried a pint bottle of the alcohol as part of his current shooting bag. I've been using small, sealed packets of disposable alcohol pads. These are tiny alcohol impregnated pads — just rub the recoil pad vigorously — then dispose of alcohol pad properly. Really works great.

COMPUTER PROGRAM FOR RELOADING

Hodgdon Powder Company has recently introduced the second version of its **BLAST ELECTRONIC MANUAL.** Included you'll find (1) updated data from Hodgdon's #27 Data Manual, (2) added info using Alliant, IMR and Winchester powders, (3) shotshell data for all gauges, (4) cowboy action reloading data, (5) log for tracking your various loads, (6) Barnes external ballistic program that is linked to the data section of the program. This new computer program should be available at dealers now or order direct—$33 includes shipping: Hodgdon Powders, PO Box 2932, Shawnee Mission, KS 66201. Phone orders 913-362-9455. You might get even more information by checking out their website at www.hodgdon.com.

NEW, *LESS EXPENSIVE*, STEEL SHOTSHELLS!

Winchester has come out with new, less expensive shotshells. Steel ammo has traditionally been considerably more expensive than lead loads, although, admittedly, steel prices have come down slightly the last couple of years. Still, the price difference is significant. But Winchester ammo says it has developed a new process for making steel pellets—that's cheaper but does not compromise the quality of the pellet in any way. Good news for waterfowlers and those who must use non-toxic shot in other hunting situations.

These new loads are called Expert(R) Steel. For duck and goose work you'll want either their 2 3/4-inch 1 1/8 ounce or 3-inch 1 1/4 ounce, the former in 2, 4, and 6 steel sizes, the latter in size 2 and 4—all at 1300 fps. For upland work and target stuff consider the 12 gauge 1 ounce load of size 6 or 7 steel, also at 1300 fps. There's even a 20 gauge load in this realm—3/4 ounce of 7s, also at 1300 fps.

I shot a prototype of these new steel loads last winter, and they performed extremely well. The new-process steel pellets are combined with a clean burning Winchester powder, a new shot cup and standard Winchester primers. You'll find them available now, and very economically priced. If you want to check out their website, it's located at www.winchester.com.

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Book-r-Video

The Labrador Shooting Dog
by Mike Gould

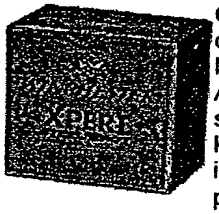
Breeder and trainer Mike Gould takes us from the very beginning of selecting a puppy for athleticism, birdyness, conformation, intellect, and personality to the end result, being a top-

OutdoorSite This Week

Hunting Public Deer

Many of us are forced to hunt public land, and taking deer on a regular basis under these conditions is difficult, but possible. You just have to have the right gameplan. **more..**

Winchester's New Xpert Shotshell Line



One of the most common questions I have been receiving lately is regarding Winchester® Ammunition's new Xpert® steel shot loads. Everyone wants to know why these loads are so inexpensive and how they will perform in the field. **more..**

Catching Fall Bass

One of my favorite ways to catch bass is on the surface when they school. Fishing for schooling bass can be one of the most exciting ways there is to catch bass, and the action will be fast and furious. **more..**

Fishing:
Boat Ramp Etiquette
Finding Hotspots on a Lake
Hunting:
That First Monster Buck
Gundogs:
Manners on the Line
Product Review:
RoboDuk Animated Duck Decoy
Whitewater Chamois Shirt
New Products and Industry News:
API Joins Outland Sports
Strike King Series 4 Crankbaits
Strike King Elite Spinnerbaits
Kevin VanDam Tube Bait

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Product Highlight

PRODUCT review

RoboDuk
Animated Decoy

Online Shopping

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Learn to identify the ducks you hunt from a distance using this easy to use guide. more..

Big Game Hunts
Free consulting from Midwestern Outdoor Adventures on finding and

flight do-anything, go-anywhere Labrador shooting dog.

Strike King Topwater Spit-N-King
Strike King Titanium Spinnerbait

hunt. more..

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Gundog Sites
Hunting Guides
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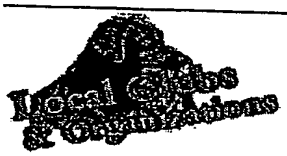
New Outdoor Organizations

- **Heartland Pointing Lab Club** - Kansas City, MO
- **Pennsylvania Trout** - North East, PA
- **Ladybug Fly Fishing Club** - Cameron Park, CA
- **Lehigh River Stocking Assoc.** - Walnutport, PA



If you belong to a local club or an organization, please let us know, we will post your group in our local State Info Pages. This service is free, so please **click here** and get listed!

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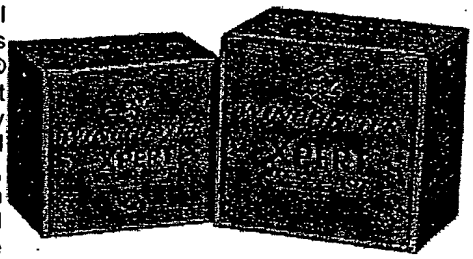
Why are Winchester® Xpert® Steel Loads Less Expensive?

By Mark Mazour

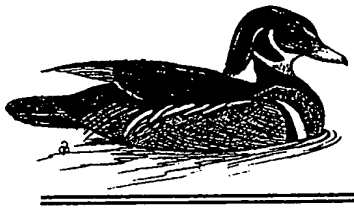


One of the most common questions I have been receiving lately is regarding Winchester® Ammunition's new Xpert® steel shot loads. Everyone wants to know why these loads are so inexpensive and how they will perform in the field. So, I took some time to speak with Winchester Ammunition and hopefully, this article will shed a little light on the subject.

Winchester Ammunition shocked many people last April with the release of their Xpert steel loads. These loads hit the shelves at retail price of $6 to $7 per 25 round box, compared to the usual $13 or more per box that consumers usually see for conventional steel loads. The Xpert load was designed to do just that, change the way that hunters look at non-toxic ammunition.

Many states today require the use of non-toxic shot for hunting in particular areas, including all Federal Waterfowl Production Areas and National Wildlife Refuges, and in some cases, on state managed public hunting land. South Dakota recently classified their public hunting lands as non-toxic shot only areas, but quickly found that pheasant hunters were reluctant to pay $13 per box for steel shotshells. As a result, a new solution was needed to meet these new standards without the lofty price tag. Officials from South Dakota's Fish and Game Department contacted Winchester in search of such a solution. **more.....**

Winchester Shotshells 2000 A Field Review



by L.P. Brezny

Change is the rule when the subject turns to Winchester / Olin and their complete line of nontoxic waterfowl loads. This past fall I was fortunate to be involved in the in-depth testing of Winchester's advanced Supreme steel-shot line, as well as the totally new Xpert steel and upgraded high-velocity Bismuth/Winchester nontoxic shotshells.

South Dakota was the first stop on the test tour, and upland gunning was the objective. We applied the Xpert brand steel shotshells now being marketed by Winchester that are both designed to be deadly in the in the uplands and the duck blind.

Shooting pheasant, prairie chicken, sharptail, and chukker partridge at Gene and Bonnie Schueth's Star Valley Lodge set the stage for a complete evaluation of the Xpert 12 gauge 2 3/4-inch #7s #6s and #4s in both a lightly loaded short hull, and a heavy waterfowl/ upland 3-inch and 2 3/4-inch 12 gauge shotshell. Xpert steel shot ammunition covers the gamut of the smoothbore hunter's needs.

Working with Browning's new line of Citori Superlight Feather, and Lighting Feather 12 gauge stack barrels, pheasants were taken on each morning. My task was to apply massive mounts of the new Xpert steel against these wild and rangy Dakota birds, while Winchester's Mike Jordan, a top gun in development, hunted with me, hoping the new fodder would return solid results afield.

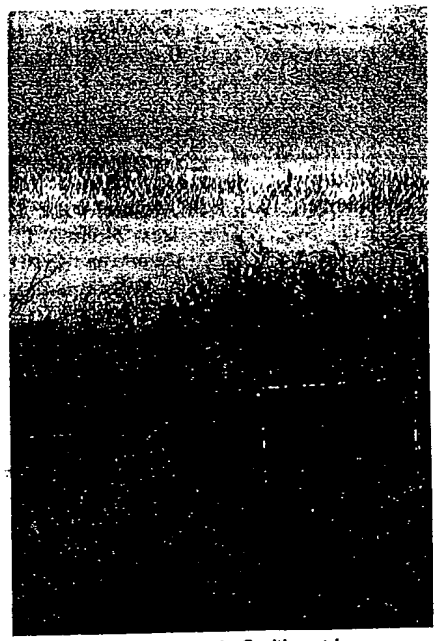
Why all the hype and activity surrounding these new Winchester designed shotshells? Because Xpert steel shot loads are offered in both 12 and 20 gauge at about 35% under the going rate of any other steel shot load that is comparable in payload, shot size, and effectiveness afield. Winchester has found a way to reduce manufacturing cost by casting their steel shot for the Xpert shotshells. Cast shot is much less expensive to produce and Winchester has passed that cost reduction along to hunters.

On that first South Dakota hunt using these new iron-shot loads, not a single comment regarding poor performance was noted by the eight writers present. That covers 12 hours of gunning each day for three days on a wide range of upland birds.

Xpert uses a paper gas seal and wad column followed by a stiff, free-floating shot cup that sits atop the wads of cardboard. This load is designed to be very effective in cold weather because the paper wad material won't be effected by the cold. However, Winchester does not advise hunters to submerge these loads in water—they are not of the Drylok type of construction.

Prior pattern work at my home range had indicated that these new low-priced loads didn't reflect their cost when sent down range into 40-yard, 30-inch circles. Shooting a variety of chokes and shotguns, the Xpert #7s in 2 3/4-inch ,and #2s in 3-inch patterned in the high 78% range. This included my Browning Gold Hunter 3

The gang at Peace River...this team could shoot and filled out on both ducks and geese in two very short mornings.



Mike Jordan and Randy Smith get low as geese approach the blinds.

1/2-inch 12 gauge, a Benelli Nova 3 1/2-inch 12 bore , and a Ruger Red Label in 20 gauge. Each test gun was shot using a modified choke, with the Browning and Nova mounting Briley extended and ported tubes, and the Ruger stack barrel its factory-installed choke system.

Regardless of the price these new Xpert loads they acted like a much higher priced shotshell. This was not just my observation, but that of most writers that shot along side me during the field reviews. Even when I ran sets of loads based on lot numbers through my chronograph velocity recording system, figures indicated that the new shotshells retained a uniform velocity and were right on the nose when matched to the printed velocity figure on the box.

With the obvious success generated at Star Valley South Dakota, the next step was to get the new low-priced and hot-shooting fodder on waterfowl. Northern Canada was the location with Peace River, Alberta and Garry Checknita with his Goose Masters operation setting the stage for what many of us believed to be some of the best goose hunting we had ever seen.

Garry used scouts to cover large areas around Peace River to locate feeding flocks of Canada geese. As a huge flock was located, permission would be obtained from the landowner, then we would set up the following morning.

Three guides and eight gunners would occupy two above ground portable blinds that were camouflaged to the very last detail. Most shooting would be at or under 40 yards by individual hunters, with some birds laser-ranged as close as 23 yards, and long pokes recorded at 54 yards.

Added to the ballistic tests were Winchester Supremes in a new 3 1/2-inch BBB configuration, and Bismuth/Winchester #2s and BBs in high-velocity loadings. Supremes were loaded to 1450 f.p.s. and the Bismuth shot loads ran just a bit under 1375 f.p.s. Again this data was gleaned by way of my measurement equipment. What this meant was the Xpert loads in 3-inch 1 1/4 ounce #2s were up against some of Winchester best offerings. However, Winchester was not one bit concerned about putting the low-priced ammunition up against their own very high-performance products. I found that to be gutsy on their part; the stage was set for a fair test.

Winchester's new Expert line of non-toxic upland and waterfowl ammunition...the price wall has crumbled in the world of steel shot.

The author almost smiles as he hefts this pair of interior Canada geese shot over decoys at Peace River Alberta. He was pleasantly surprised at the effectiveness of Winchester's new low-priced steel fodder.

Winchester was not one bit concerned about putting the low-priced ammunition up against their own very high-performance products. I found that to be gutsy on their part; the stage was set for a fair test.

On the first morning afield just about everyone selected the new Xpert 3-inch #2s as a starter load. I didn't feel very comfortable shooting #2s on giant Canadas—those near my home in Minnesota would shake off these pellets like so much pea-size hail in a rain storm. However as the first flock of seven birds came over the tree tops and dumped directly into the decoys without a bit of hesitation, my worries regarding the smaller shot size quickly faded. As the lead bird closed to 27 yards then dropped its feet, eight shotguns cleared the sky within seconds. When the guns subsided only a single bird remained anything close to mobile and was quickly put down by a dispatching shot.

Now flock after flock of lesser and interior Canada geese were coming off the river several miles beyond our harvested pea field. With little time to spend reviewing harvested geese, hunters reloaded, or at least topped off the magazines on there Benelli's, Brownings, Winchester X Guns, and 870 Remington's. Winchester/Olin had requested writers bring along 3 1/2-inch 12-bore shotguns as the new super 12 gauge BBBs in Supreme and BBs in Bismuth would also be shot directly from the factory prototype stage during this ammunition test.

Shooting an end position in my blind, I spotted a pair of Canadas closing from my side. Mike Jordan called the shot and asked me to take both birds as the shot was almost impossible for any gun save for my specific locations. Coming up with my Browning 3 1/2-inch Gold, the lead bird rolled almost backward in midair as the 1 1/4 ounce payload of #2 steel pounded it head on. As the second goose turned, giving me a crossing shot, it too was pushed over with the eruption of 158 steel deuces, traveling at 1300 f.p.s. Using my Bushnell Pro 400 laser ranging system, both birds had been hit at 38 yards over the decoys. Needless to say, my thinking was quickly changing in terms of my opinion of smaller shot on medium to small Canadas over decoys.

What was also interesting was that during reloading on subsequent flocks by the other hunters, gunners had not reached for heavier loads, but stayed with Xpert #2s, almost to the man. I have indicated "almost" because Mike

Jordan and Kevin Howard, the Winchester public relations top gun had turned to the 3 1/2-inch 12 gauge Supreme BBBs, and Bismuth 3-inch high-velocity BBs. While most of us shot lead birds in the flocks that at times included 50 or 60 birds, Mike and Kevin were picking out trailing, longer-range geese for test purposes.

Shooting the first morning's geese had not taken very long. In fact, hunters were limited out in less then an hour. Cripples numbered just three birds total.

The abundance of geese eliminated any need to stretch for killing shots, unless purposely testing for extended range. Most of the birds were inside the 30-yard mark before shooting commenced as called by the fire director Gary Checknita, or his lead guide, Poncho, a very proficient goose hunter. Again my laser ranging system had been used to confirmed the above figures.

These geese were fresh off the northern Alberta nesting grounds and as such had not seen decoys or humans prior to closing on our spread of Outlaw and G&H field shells. Mike Jordan had indicated that it was nice to see calling actually work for once. Back home in Illinois, gunning pressure is so great, no amount of calling can pull the birds at times. This hunt at Peace River was north of the 54th parallel, and you could say we were the very first to initiate these Canadas to hunting.

This hunt at Peace River was north of the 54th parallel, and you could say we were the very first to initiate these Canadas to hunting.

Gunning the second morning produced ducks in numbers at first light. Now it was time to turn lose both the Xpert #2s and also a Supreme 3-inch, 1 1/4 ounce load of #3 steel being introduced for the first time in the field by Winchester. Due to hunter demand the #3s were being reviewed as a possible load choice in Supreme "black bullets" this season. While Winchester had offered the top-end shotshells in #2s last season, the success was so obvious that now a more complete line of Supreme high-performance shotshells was soon to be introduced.

Keeping the shooting to decoy ranges not to exceed 45 yards, the Supreme #3s returned outstanding results over the goose decoys. Backed by again the Xpert #2s nothing was safe among the group of professional shooters now hunkered down in the blinds.

As geese arrived a bit later in the morning, I elected to make the switch to Supreme BB steel in the 3 1/2-inch wrapper, followed by Bismuth 3-inch high-velocity BBs as a third shot. Now I could stretch my shots and deal with birds outside the lead point of the flocks as they crossed into decoy range.

Not only had I made a change in loads, but by changing fields we had come into some interior Canadas that were about three to five pounds heavier then the first day's lesser Canada

geese. These birds were a far better example of goose targets and were clearly entering the "hard target" category of ballistic waterfowl review. Still, few geese made it out of the decoys alive. At one point, Randy Smith's CV Productions video camera set up about 75 yards beyond our spread captured several seconds of tape that illustrated "black rain," a term I coined during the hunt which described a total of 10 geese falling out of the air at just about the same time.

Canadian hunters that were just being introduced to steel shot and not liking it at all were impressed with the field results. Joe Arterburn, the senior copywriter for Cabela's, noted that we hunters north of the border were being convinced just what steel shot waterfowling was all about. This observation by Joe was obvious as the Canadians kept commenting that obviously there was nothing to fear in terms of steel doing the job.

I have received many calls from Canadian hunters wanting to know which guns and loads to take afield with the law changes now taking place in that part of the world. My advise is retire your older shotguns if you are not shooting a bore-safe bismuth or polymer product, then buy any brand or model of smooth bore that is steel-shot safe. If you're not doing so now, work on your decoying knowledge and calling ability because your going to need both when using the new form of non-toxic steel shot coming into the field today.

Winchester has recognized the need for better steel shot loads and loads that are more affordable as well. Based on both the upland South Dakota hunt and our outstanding trip into the far northern waterfowl production areas of Alberta, hunters in both countries now have some additional options when selecting loads for field use.

Winchester's field staff has stated often that common steel shot is going to be the major product for waterfowling for some time to come. By working to improve that product, in terms of both cost to hunters and effectiveness afield, this company appears to be on course to continue to be a leader in non-toxic waterfowl and non-toxic upland ammunition.

Remember, the 12 gauge shotgun shooting steel, regardless of hull length, is basically a 40-yard firearm. Say what you want, as ranges extend beyond 40 yards patterns get weak, velocity falls off, and in a very short space of the next 10 to 15 yards, ballistics fall apart. Sure, we can make up for some of the problems associated with steel by picking up payload velocity and buffering pellets so as to improve patterns, but only so much can take place with an iron-shot load to extend range and performance. The new generation of Winchester steel shot ammunition and fast bismuth shot loads are going to make a difference afield and in your pocket book, but they are no substitute for basic good waterfowl hunting skills.

I will be reviewing the 20 gauge extensively this season with a good deal of follow-up on the smaller gauge offerings along the way. Winchester and others are now upgrading their 20-gauge offerings and Wildfowl readers will be kept informed as to what's out there for gunning use when the smaller shotgun is taken to the marsh. ❑

SHOTGUNS 'N SHOTSHELLS

L.P. Brezny

Non-toxic Shot and the "Dead Zone"

From the muzzle to the point that a given load of steel shot runs out of steam is its working "dead zone," or the abbreviated "DZ". The following is an in-depth review that should explain to you just how effective steel shot is--close to surgical precision--applied to its proper DZ.

It takes a hunt that can't be classified as anything but perfect to gain some insight as to what is meant by the clearly defined DZ section of air space that allows waterfowl to die cleanly--versus being crippled. This hunt took place in the far northern reaches of Alberta, Canada, specifically the Peace River area, this past fall. It is a land of almost motionless time, wild game is plentiful and even a mediocre caller can turn up the volume and sound like a pro while geese drop in at barrel-length distances.

Decoy hunting fresh Canada geese just in from the northern regions of the Northwest Territories means honkers that cup-up in large numbers and decoy to any range you care to work them before shooting. In most cases, local hunters above the 54th Parallel use light guns, such as 20 bores. In fact, up until the recent introduction of steel and non-toxic shots, a 20-gauge, 3", 1-1/8 oz. payload of #2s in lead pellets did just fine when applied as a sub-gauge (20-gauge) goose-killing tool. The point to all this is that the Peace River area of Alberta is a complete and total heaven to any goose hunter that has fought every known negative condition while attempting to collect a limit of Canada geese "down in the Lower 48."

With some of the world's best goose hunting available in that Canadian province, when the subject turns to testing loads, and in this case Winchester's new non-toxics for the forthcoming millennium, a real classroom opens in terms of observing just how effective varied sizes of steel shot can be when used at different velocities and in changing types of loads. Even with a 25-year background in shotshell load development, and most of that time spent working with steel shot, I learned much during but a few days afield.

Setting the stage for a test hunt under the above conditions, Goose Master, headed by Garry Checknita of Peace River, was commissioned by Winchester/Olin. Garry runs an outfit that will send scouts in every direction in search of the very best feeding locations in order to put hunters on many birds each day afield. In general, if a field is not holding at least 500 geese, Goose Master will not consider it a workable site for next morning's hunt.

A Winchester ballistics test team at Peace River, Alberta. This is a one-day limit of Canada geese taken during the testing of Winchester's new iron shotgun shell loads.

Shooting mostly on cut pea fields (peas are used for livestock feed) in the area, Checknita uses his own design of above-ground folding blinds coupled with the addition of local brush to reduce the box effect of the blind on the flat, very open harvested fields. With the detailed blind in place, common field shell decoys are placed along with some higher-standing silhouette decoys. Goose Master packs all the decoys and blinds into three-quarter-ton 4X4 crew-cab trucks. This makes the five-man hunting rigs flexible and fast moving in relation to morning set-ups or take-downs, at times allowing fowlers to head for a duck field later in the day.

Shooting from four to eight gunners in a pair of blinds set side by side, Garry controls the shooting and never allows any hunter to freelance on shots that are within his range but not available to the party in general. In effect, Garry will bring the first incoming flock right to the blind--by that I mean a laser-ranged 21 yards in the several cases that I recorded. With the first flock in very tight, the order to fire is given and everyone works on the birds as a team.

The blinds allow a hunter to clearly observe approaching geese through loose grass designed with small spaces so individual birds can be tracked by respective hunters as they close on the blinds. This is very different from the pit style and cover blinds that don't allow the hunter to " set up" on birds as they descend on a decoy spread. In the Goose Master system, every hunter has the opportunity to watch approaching flocks as Checknita calls out directions and the general closing ranges. In effect, we could pick our targets based on some very exact ranging conditions. Since targets were no problem whatsoever and the incoming flocks continued arriving for what seemed like forever, the pressure was off to make target contact on every goose that flew across the decoy spread.

Day One

Ammunition selection

Since Winchester had just unveiled its new Xpert line of modestly priced shotshells, Mike Jordan, the head

controller on the hunt, had requested our eight writing and television editors to start by shooting the Xpert 12-gauge, 3", 1-1/4 oz. loads of #2 steel. These new loads were selling for about 35 percent under similar brands, including Winchester's own higher-priced loads, and at $7 a box I was very interested in how well the non-toxic loads would perform. Also of interest was the fact that I was not at all used to using small shot, such as #2 steel, on Canada geese. For us Minnesotans not used to using small shot while hunting giant Canadas--the small pellets roll off the giants like so many drops of water--this would prove interesting.

At a muzzle velocity of 1,300 feet per second, these Xpert loads of #2 steel shot run out of steam at about 45 yards, or a terminal velocity of 600 fps, when used on large mallard ducks. In terms of geese, however, to that point I was more then interested in what was about to take place inside the DZ killing net. Geese are big birds and as such seem to require far more horse power from a given pellet of lead, steel or other non-toxic.

With just about every hunter in the blinds loaded with the new Xpert #2s, the first wave of geese approached the decoys dead ahead while a light wind puffed against the backs of our necks. Observed through the net-laced grass, the Canadas loomed larger and larger as they began to lock, then wobble in the light air while trying to maintain air speed to the decoys. 'Take 'em!" was the call by Garry as the geese stood at point-blank range over the muzzles of our shotguns.

In the next several seconds the sky turned clear as all nine geese dropped past the horizon enroute to earth. All that remained were several patches of floating down riding the light air away from the blinds. For the most part, no one said a word for what seemed to be hours. However, as reality returned with the movement of our guides and dogs recovering the harvested geese, the hunters started to discuss the event while reaching for more ammo to reload and prepare for the next almost mystical-like occurrence to take place.

At the called range of 25 yards, everyone reached for a second helping of Xpert #2s since it was quite obvious that this load was doing the job within this previously established DZ set up by Checknita. On different occasions, geese in the first flocks, usually only three or four Canadas, were allowed to drop in while we held off for a larger flock closing

Joe Arterburn of Cabela's with a goose harvested during the Alberta hunt. Arterburn was the author's partner and roommate in Alberta for the once-in-a- lifetime goose hunt.

behind the smaller group. At these times the grounded birds would stay around and walk through the decoys as we fired at the incoming birds. These "tundra" geese had not been subjected to any previous hunting and gave way to the ability of the Goose Master team to control the exact close-range shooting we were experiencing.

What was clear after shooting several flocks, and not giving away any birds to the foxes or coyotes, was that when very strict discipline is adhered to in regards to exact killing ranges, even the #2s have a place afield. Needless to say that I was impressed and took away a learning experience from that first morning. We had collected a full limit of Canada geese in less then an hour's time, but had not moved to any shot sizes or loads above the Xpert 12-gauge, 3", #2 steel.

Day Two

Heavier loads, increased range

Day two was set up for a split team hunting in two different fields. We had set up again in a cut pea field. I now dropped my use of the Xpert #2s and turned to Winchester's Supreme #2s, but loaded to 1,450 fps at the muzzle. I wanted to see just how much range extension was practical with the 150 fps increase in velocity displayed by the new Supreme "Black Bullets," as they became known by the different groups of outdoor writers.

Packed along with the #2s in 3", 1-1/4 oz. loads were totally new 1-1/4 oz. #3s in the same Supreme fast loads. These shells were marked with the Winchester factory white tag to indicate that the shells were a prototype and as yet didn't display any markings on the hulls themselves. This was important since keeping the loads in the box or stored separate was required for several obvious reasons.

As an after-thought, I loaded the final round in my Browning Gold Hunter with Winchester Supreme 3-1/2" BBs packing 1-3/8 oz. of iron shot. In the event I crippled a bird with the #3s that I was also going to shoot over the decoys, the heavy 3-1/2" BBs could possibly save the day with a follow-up shot.

With the arrival of the first geese, I picked a bird on my side of the blind and when Garry gave the order I turned loose the new #3, 1-1/4 oz. of steel shot. At about 32 yards the goose folded dead in mid-air as it soaked up the 1,450 fps velocity that was pushing the small but deadly iron-shot pellets. Moving off the now-dropping goose, I pulled on a second bird. This time my target had drifted beyond the DZ by several yards. At 45 yards the goose was rocked hard by my second shot, but recovered quickly. However, the third round of BBs were going to earn their keep. As I touched off the big Winchester shotshell, the Canada goose, now flying straight away at better then 55 yards, puffed into a pillow of black and gray feathers. I had exceeded the killing net or DZ of the steel #3s in a very short distance over the decoys, therefore I had been required to use the heavy load of BBs as my hit but still-flying goose tried to escape from the decoys.

Those BB steel shot loads will push 60 yards at 600 fps. Used for the smaller lesser Canadas that we were hunting, that pellet velocity produced more then enough energy and penetration to get the job accomplished. As an effective DZ in this case, the range had been increased to about double the effectiveness of the #3 steel, and again a third further than the #2s. Several additional flocks gunned with combinations of the faster #2s in Supreme and the new 3-1/2" BB Supreme steel clearly illustrated that stone-dead geese were a given conclusion as I walked up the ballistic line with load velocity and pellet size increases.

I have to say that my information came quickly on that second morning, but it was not to last very long in terms of repeat performances. In a total lapse time of under 47 minutes, we had harvested a

four-hunter, one-guide limit of Canada geese. This meant a goose had been "dusted out of the sky" every minute or less in the time we had spent afield.

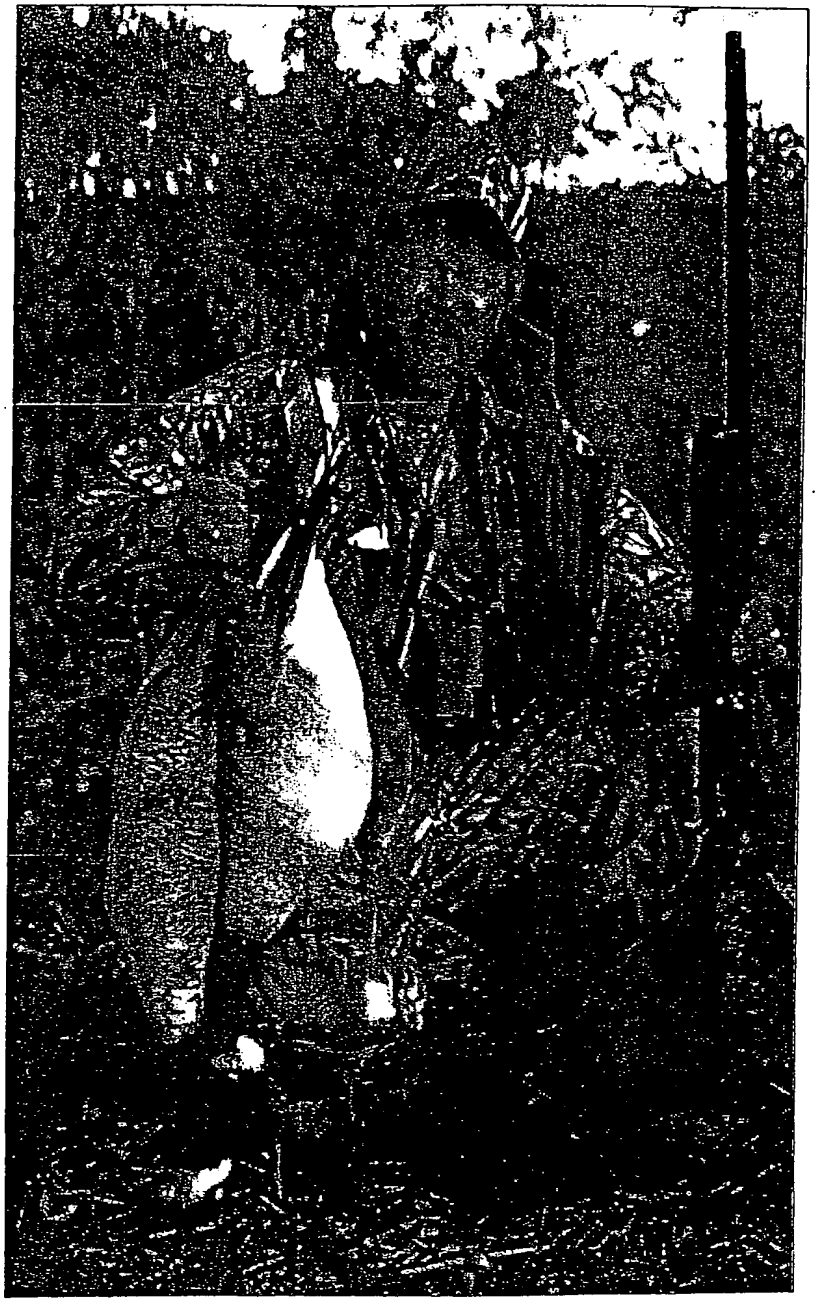
Now it was afternoons on mallard ducks and the new Xpert #2s or fast moving #3s in Supreme steel that gained our attention. As yet I had not taken the new Winchester BBB 3-1/2" Supremes into the goose blind, but all that would change on the third and final morning.

Hunting again as an eight-person group with several guides, we set up in a massive pea field close to some big water that held thousands of Canadas. With the graying of first light, it was mallards and pintails buzzing the decoys and inside that DZ of 40 yards the Winchester Xpert #2s took them down easily. Then, with the first dog bark of incoming Canadas, everything changed. Shotguns were reloaded with heavier shot and we were quickly prepared for the much larger, lumbering Canadas that would appear over the shell decoys.

After stuffing the 3-1/2" BBBs into my magazine, I worked on a mind-set that I would only pull for fringe-edge shots on the flocks and try to extend my DZ as far as possible based on the available Winchester loads. This load was in effect the maximum killing net associated with this hunt, since the shot size and velocity stopped right at BBB steel and 1,450 fps.

Sitting down a seat or two from me was Mike Jordan. Just as I was doing, he had turned to the new, heavy steel shot "fast-movers" while trying to bring some birds to bag with the new shot on the Winchester block. Winchester BBBs at a chronographed 1,535 fps, well above the published figure of 1,450 fps on the box, retained more then 600 fps at 70 yards down-range. When shot over photo ballistic recording screens, BBBs moving from the muzzle at 1,375 fps are still flying at a speed of 607 fps. Therefore, increase the muzzle velocity to the above-listed figure and you have a real "screamer" in iron shot going into goose targets.

On the first flock of incoming birds I didn't fire a shot. With our two-blind line of 10 hunters, there were not enough targets in an eight-goose flock, but I did get to observe Mike take a high-passing goose not even associated with the closing group of Canadas by way of the new BBBs. At a strong 65 or better yards, the bird almost turned inside out, then dropped like a wet sack of grain out of the sky. Mike had increased the DZ by again more then double as compared to the starting tight decoy range of 30 yards using #2s. The rule of pellet speed and size was taking over air space and it was obvious that there had been a major ballistic change in the pea field that morning.



The author and Canada geese harvested during the Alberta hunt.

My shooting of the 3-1/2" BBBs was just about redundant, for I crushed several geese at modified decoy and pass-shooting ranges with the new waterfowling load from Winchester. The loads were so deadly that, for the most part, they were not even close to necessary on these tundra birds. Even trying to cover a long-range bird with the new shot was difficult at times. In effect you had trouble locating a bird that was still alive and far enough to test the triple B's against.

Reviewing the Field Data

By selecting a given load to be used at a pre-selected DZ you can choke your shotgun to send out the best "sweet spot" infected pattern at your pre-established shooting range. In other words, it's #2s at

Mike Jordan and Kevin Howard of the Winchester team investigate the damage to Canada geese inflicted by the new Xpert line of shotshells.

35 yards with an improved cylinder or light modified choke, or BBs at 60 yards with a steel shot improved modified or full choke. I realize that this involves more thinking on the shooter's part, but being successful with steel shot does require a bit more attention to range details and gun-choke match-up with your selected ammunition for the day.

Shot contact on targets needs to increase as shot size decreases. What is all this about, you're wondering? Well, to put it simply, you need so much energy on a target to bring it down cleanly. Because small shot won't deliver the same per-pellet energy as large shot, the total number of smaller pellets must be increased.

When hunting those Canadas over decoys and shooting #2 steel, each pellet would produce about 3.0 ft/lbs of energy at 40 yards. This was about the end of the working ballistic range regarding the effective use of #2 steel over decoys. Eight hits on a goose with those #2s at 40 yards produced 24 ft/lbs of penetrating energy on target. That's a whole lot of energy and it showed as geese dropped stone dead inside the goose shells over our field. Now at 60 yards, BBs will develop about 5.0 ft/lbs of energy, therefore it would require about one-half as many hits. And because of the reduced pellet count when using larger shot, that's about all you're going to get if you even get that many contact strikes. With BBs producing 20 ft/lbs at four pellet hits, the energy has been basically maintained but the range increased due to, again, shot selection and shot size. Our conclusion is that the DZ has been maintained.

Steel shot today has changed a great deal even in the past five or so years. Those hunters that turned against it and left the sport of waterfowling have cut off their nose to spite their face. With a bit more brain power, steel can be very effective and a deadly tool afield. If you still have doubts, just ring up Goose Master at Peace River, Alberta, and inquire how steel is doing under Canada's new non-toxic only regulations.

When we arrived in Peace River, guides were not at all impressed with steel. In talking with the Winchester crew, we laughed for what we were hearing were those same old song-and-dance tunes we were getting as feedback about 15 years ago in the states. That all changed by the time we rolled up the blinds for the final time and pulled the last decoy off the pea field. Using an effective Dead Zone is the key and learning that exact ranging system will bring far more cleanly harvested birds to bag.

If you're interested in hunting the Peace River, Alberta, area, contact the Goose Master Waterfowl Camp, C/O Garry Checknita, 8422-100 Ave., Peace River, Alberta, Canada, T8S 1N4; telephone: 780-624-1839, or fax 780-624-8488.

"WINCHESTER'S NEW INEXPENSIVE STEEL"

By: Tom Roster

Sporting Clays, March 2000

I doubt if Winchester planned it this way. But it worked out perfectly for clay target shooters. With the announcement of its new Xpert Steel line, sporting clays shooters now have an inexpensive choice of nontoxic shot loads when occasionally required to use it. What's inexpensive? How about a 25-round box of 2 ¾" 12-or 20 ga. steel loads in the $5 range? Don't believe it?

In late 1999, Winchester announced a new line of inexpensive steel shotshell ammunition. This line, dubbed Xpert Steel, featured reduced-cost hull and wad column components in 12- and-20 gauge loads. These shotshells incorporate a new, efficient, clean-burning propellant not only lower in cost but quite clean burning compared to traditional powders loaded with steel shot. It features a new method of steel shot manufacture that Winchester is holding proprietary. Most significantly, Winchester's new Xpert line will blow the lid off the traditional pricing of steel shotshell ammunition.

Let's say you're a sporting clays shooter using a facility that requires non-toxic shot for certain over-water shots. Or you're a hunter looking for an affordable yet effective snipe or rail load. You want to get in some affordable practice before the season. Winchester's Xpert Steel line is your answer.

From a clay target shooting perspective, Winchester's Xpert line has got you covered. If you're a 12-ga. shooter, you will be very interested in the new 2 ¾", 12-ga., 1-oz. Xpert Steel load in shot sizes No. 6 or 7 provided these larger sizes are permitted at your course. This load, carrying Winchester symbol WE12, is launched at an instrumental velocity of 1,300 fps. Having shot tens of thousands of clay targets with No. 6 and 7 steel shot with a variety of velocity levels from 1,200 to 1,425 fps, I can personally state that 1,300 fps represents an excellent compromise for steel shot performance vs. recoil.

The WE12-ga. 1-oz. Xpert Steel load in either 6s or 7s smashed clays decisively for me all the way to 40 yards (7s) and 50 yards (6s). I used nothing more than an improved-cylinder and modified choke. Breaks were more decisive, however, with the 6s at the 40- to 50-yard range with a full choke. The 1-oz. Steel shot charge represents plenty of shot for excellent pattern density with 6s and 7s on clays. The 1,300 fps velocity level not only provides adequate downrange energy, it also keeps recoil to a pleasant level. This is very important from a practice standpoint where several boxes will be fired in short order.

If you want to shoot sporting clays with a 20 gauge and/or practice for hunting using steel shot, the new Winchester Xpert Steel WE20 ¾-oz. load of No. 7 steel is excellent. For years, 2 ¾" 20-ga. shooters desiring steel shot practice had to make do with various companies' ¾-oz. Steel hunting load of No. 6 steel at a whopping 1,425 fps. I have shot hundreds of cases of this load in my own practice. While this load will absolutely smoke clays well out to 45 yards, it is not only expensive, but the 1,425-fps velocity yields a recoil level higher than desired for extensive practice. This load is also not the most pleasant for lightbodied shotgunners to shoot.

From my experience, a ¾-oz., 2 ¾", 20-ga. load of 7 steel at an adequate velocity of 1,300 fps is what is really needed. Federal was the first to offer such a load with its W2087. This 2 ¾" 20-ga. steel load is excellent, and I have gleefully smashed hundreds of clays with it. Federal's 20-gauge load also solved the recoil problem. However, because it is loaded with traditionally made cold-rolled steel 7s, it is still quite expensive.

The new Winchester Xpert WE20 steel load gives the clay target shooter not only a ¾ -oz. 20-ga. payload of No. 7 steel at 1,300 fps, it serves it up at a significantly lower price. With the 20-ga. WE20 Xpert load, clay target shooters can expect decisive breaks out to 35-40 yards. The more expensive Federal W2087 load, with its higher quality No. 7 steel shot, extends the claybusting range to 40-45 yards.

At this time, Winchester will not reveal the method of manufacture of the steel pellets loaded in its new Xpert line. Cutting apart an Xpert Steel shell reveals shot of a lower quality in terms of shape than hunters and shooters to this point have come to expect. That is, traditional steel shot made by a wire-chopping, cold-rolling or heading process has consistently yielded very round, very uniform steel pellets. Traditional steel shot also yields very high quality patterns.

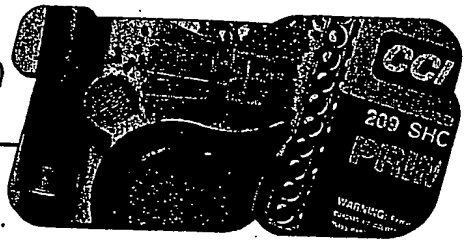
The steel shot in Winchester Xpert Steel is decidedly not as round or uniform in either shape or size as traditional, high quality steel and does not appear to utilize either a cold-rolling or heading process. Rather, the shot looks like it was made by a tower or machine-dropping process, similar to how lead shot is made. This alteration in the manufacturing process would account for the significant reduction in overhead expense of supplying the shot in the shell and how Winchester Xpert Steel can sell for so much less than competitive steel shot ammunition.

From a terminal ballistics standpoint, one important reality must be appreciated. There are both pluses and minuses to steel shot being less round and uniform. It will develop a longer shot string larger in diameter and more like lead than traditional steel. That will help with hitting targets. That, plus lower price, is the good news.

But with a lower form factor, any less expensive steel shot will not retain energy as well downrange, nor will it penetrate as well as more highly spherical and smoother-surfaced steel shot. Less round; less uniform steel pellets also will not pattern as well as more highly spherical steel. This means hunters should not expect quite as good long-range killing performance from Winchester's Xpert Steel line as from its Drylok steel line.

Yes, the Xpert Steel line is also available in 3", 12-ga., 1 ¼-oz. loads and 2 ¾", 12-ga., 1 1/8-oz. shells in No. 2 and 4 steel, plus No. 6s in the 2 ¾" loading. Both these rounds also carry an instrumental velocity of 1,300 fps. I have not yet had an opportunity to pattern or field test these hunting load versions of Xpert Steel, targeted principally at waterfowl and upland game birds. When I do, I'll report my findings.

KNOW YOUR RELOADS



Steel Shot Upland Loads In The 12 Gauge 2¾" Shell

BY R.H. VANDENBURG, JR.

There are several new items of interest in the world of shotshell ammunition. One is the new Xpert Steel line from Winchester. Xpert Steel is the steel equivalent of the Winchester promotional lead line so popular with upland hunters. Winchester has developed a new steel shot manufacturing process that helps hold costs down. In line with the lead loads, the steel shells use a paper overpowder wad and filler, and a plastic shotcup with four slits is incorporated to keep the steel shot out of contact with the barrel interior. What makes this ammunition unique is its nominal velocity of 1,300 f.p.s.

Heretofore steel shot ammunition had been directed at waterfowlers and, to a lesser degree, clay target shooters. Ammo for the former is characterized by large shot and high velocities, often exceeding 1,400 f.p.s.; for the latter, it holds smaller shot usually kept to a more traditional 1,200 f.p.s. or so. Steel shot ammo for upland hunters, which calls for larger shot and higher velocities than those for target shooters but not to the levels required by waterfowlers, was generally not addressed. With the introduction of the Winchester Xpert Steel line, that is changing.

What makes the distinction necessary is the gun. A waterfowler's gun tends to be heavy to better protect the shooter from the recoil of heavy loads and to ensure proper follow-through when swinging on yon duck or goose. Target guns need some heft to absorb the recoil of the hundreds of rounds often fired in clay target events, as well as to provide the momentum for a proper follow-through. An upland gun, on the other hand, tends to be light to ensure responsiveness and to not tire the hunter unduly, as the gun is often carried for miles during the course of the day.

The Xpert Steel lineup currently includes a 12-gauge 2¾" shell with 1⅛ ounces of steel 2s, 4s or 6s and a 12-gauge 3" shell with 1¼ ounces of 2s or 4s. Also included is a 12-gauge 2¾" shell with 1 ounce of steel 6s or 7s and a 20-gauge 2¾" shell with ¾-ounce of steel 7s. All are loaded to a muzzle velocity of 1,300 f.p.s.

At a recent writer's seminar I was among those able to test this new ammunition on upland birds and Sporting Clays. We used a new line of Browning Citori over & unders built for upland hunters and a series of 20, 28 and .410 guns for the sub-bore Sporting Clays game. All the guns and ammunition performed very well. Number 7 steel was all we needed on the Sporting Clays. For the birds, I most often used a very light, aluminum-receivered Citori chambered for the 2¾" 12 gauge. Preferred shot sizes were steel 4s for pheasants and 6s for chukar, sharptail and prairie chickens. Recoil, even in the guns approaching 7 pounds in weight, simply was not a factor thanks to the velocity.

Back home, attempts to duplicate the 1,300-f.p.s. concept in my handloads became an exercise in frustration. As with factory ammunition, almost all steel reloading data has been directed at waterfowlers and target shooters. There are a few exceptions, however. One I particularly like is assembled this way:

Federal Gold Medal 12-gauge 2¾" hull
Federal 209A primer
Ballistic Products Multi-Metal MM12234 wad
31.5 grains Hodgdon HS-7 with buffer (from Ballistic Products)
1⅛ ounces of steel shot
Velocity: 1,285 f.p.s.
Pressure: 10,500 l.u.p.
Source: Ballistic Products, Inc.
Status of Steel 2001

The wad used is sometimes listed as MM1275. It is the same wad. My source did not list the weight of the buffer, but I have found 20 grains is about right.

That load provides a bit of versatility, as the same source lists the above load with 32.5 grains of powder and no buffer for 1,330 f.p.s. and 10,500 l.u.p. In my testing I also loaded 32 grains without any buffer for just about 1,300 f.p.s. Patterning was excellent, particularly with an improved cylinder choke tube. In the hunt I mentioned, all the 12-gauge guns were equipped with improved cylinder and modified tubes.

For hunters who have access to the imported Cheddite hulls, here's another good load:

Cheddite plastic 12-gauge 2¾" hull
Fiocchi 616 primer
Ballistic Products Ranger Plus wad
31.0 grains Hodgdon HS-7
1⅛ ounces of steel shot
Velocity: 1,300 f.p.s.
Pressure: 10,000 l.u.p.
Source: Ballistic Products, Inc.
Status of Steel 2001

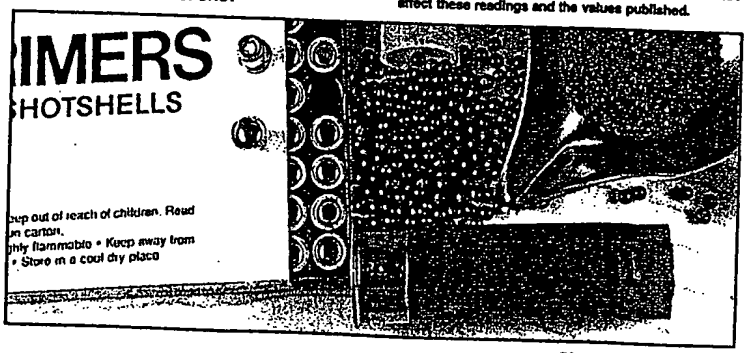
One of my favorite steel shot wads for the 2¾" 12 gauge is the CSD118 from Ballistic Products for 1⅛ ounces of shot. The CSD series is unique in that the wads have a small cushioning section between the overpowder cup and the shotcup, similar to that found on plastic wads for lead shot but much shorter. I'm also fond of the all-plastic Activ hull. Ballistic Products, in the same source that was listed earlier, has assembled the following load:

Activ 12-gauge 2¾" hull
CCI 209M primer
Ballistic Products CSD118 wad
22.5 grains IMR SR4756
1⅛ ounces of steel shot (No. 4 or smaller)
Velocity: 1,300 f.p.s.
Pressure: 10,500 p.s.i.
Source: Ballistic Products, Inc.
Status of Steel 2001

As the new Winchester Xpert Steel line becomes popular and more hunters find they must use steel shot, even for upland hunting on a growing number of public lands, load development in the area of steel shot for upland game will be given more attention. I second that! *SS*

CAUTION: Read the notice and disclaimer on page 5 of this magazine. Always consult comprehensive reference manuals and bulletins for details of proper training, requirements, and procedures, techniques and safety precautions before attempting any similar activity.

NOTE: Pressures are often listed as "p.s.i." or "l.u.p." values. You may find different pressures listed for the same load in different handloading manuals. They are *not* the same. In general, p.s.i. values will be about 1,000 units higher than l.u.p. values. This applies to lead-shot loads *only*. There are often *considerable differences* between the p.s.i. and l.u.p. values with steel-shot loads. Also remember there can be differences in how loads act in various test guns and equipment that can also affect these readings and the values published.



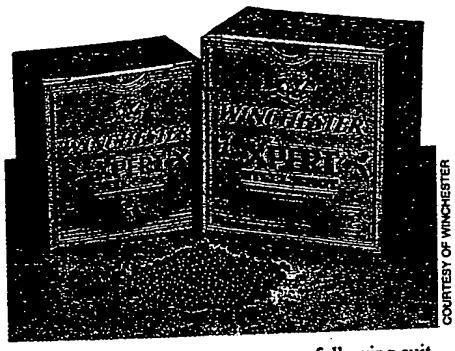
Shooting Sportsman March 2000

shell (Gazette, Sept/Oct '98), the 28-gram F2 Ultra Velocity incorporates the top strata of B&P's high-tech components. The payload is highly polished, high-antimony No. 7½ shot, and the combination produces a true muzzle velocity of 1,409 fps. Patternboard tests through a Briley Light Modified tube showed no gaps and uniformly tight cores, and perceived recoil was roughly the same as that of a plain-vanilla 3-dram trap load.

Static patterning never tells the whole story, so I put these loads through a real-world test on some extreme sporting targets. I'm talking 60-yard teal and 75-yard crossing battues. In each case, after the lead was found, the cartridges performed as advertised. The perceived lead on the battues, in fact, came down from school-bus length with run-of-the-mill 1⅛-oz loads to a pickup truck with the F2 Ultras. That might not sound like much, but it makes a huge difference when you're trying to duplicate the visual sight picture. Also noticeable was the reduction in lag time between trigger pulls and target breaks (which were rock-solid). On long clays or medium-distance presentations with a narrow break window, these shells are pure murder.

Though these loads are directed at the clay shooting market, they proved wickedly effective on doves—including those as far out as 60 counted paces. And I wouldn't hesitate to suggest them for prairie birds at fringe ranges. For more information on F2 Ultra Velocity shells, contact B&P America at 972-726-9073.

—Barry G. Davis



COURTESY OF WINCHESTER

Winchester's X-pert Steel

As non-toxic shot intrudes into new arenas, expensive shotshells are becoming the norm. South Dakota now requires nontoxic shot on all public lands, and some clays courses are following suit. This trend will continue.

Going against at least part of the trend are Winchester's new Xpert steel-shot loads. With discount-store prices in the $5 to $8 range, depending on the load, many wingshooters won't feel priced out of nontoxic sport. Winchester pulls this off with two new manufacturing approaches. The shot is made by a patent-pending process that brings the cost way down yet still provides reasonably round pellets. Second, the shells are not waterproof like higher-price loads.

Waterproofing isn't a problem for shells billed as "upland game and target loads." In South Dakota, where I field-tested the Xpert shells, it wasn't even a consideration. I shot steel at prairie chickens, sharptails, wild pheasants and several rounds of clays. With velocities of 1,300 fps, they shoot like target loads, and fellows in the know tell me they pattern well. The 1-oz loads of No. 6 shot performed admirably on early season birds.

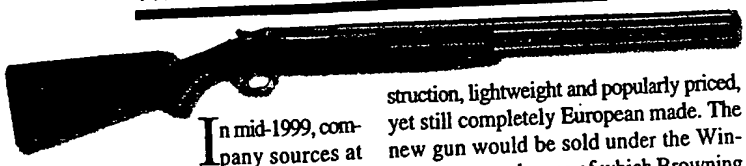
Xpert shells come in a variety of loadings up to, and including, 2¾" with 1⅛ oz of No. 6 shot, and 3" loads with 1¼ oz of No. 2 or 4 shot. There is even a ¾-oz 20-gauge load.

I wouldn't pick one of these shells out of six inches of water in the bottom of a duck blind, but an ounce of No. 6 or 7 shot would be perfect for snipe, doves or jump shooting on waterfowl management areas.

—Steven Dodd Hughes

Wingshooting News

Winchester Unveils New Over/Under


COURTESY OF US REPEATING ARMS CO.

In mid-1999, company sources at Browning SA, in Herstal, Belgium, unofficially revealed that a new over/under was in the works: one of all-steel construction, lightweight and popularly priced, yet still completely European made. The new gun would be sold under the Winchester name, the use of which Browning has licensed.

This tidbit led to speculation that Brown-

See 3rd page

SPORTING CLASSICS
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DOUBLE TIME

For 2000, gun-makers have a great new lineup of weatherproof pumps and smooth-shooting autoloaders, but where they've really picked up the pace is in doubles – from surprisingly affordable over/unders to classic side-by-sides.

By Ron Spomer

Should you doubt we're riding a high economic wave in the good old U.S.A., visit your local gun shop. There are more models and higher grades of sporting guns now than ever in history, including a dazzling array of new double guns – from surprisingly affordable over-and-unders to classic side-by-sides, in addition to weatherproof pumps and smooth-shooting autoloaders. Wingshooters have never had it so good. The only tough part is choosing among so many good guns.

The futuristic looking *Benelli* Nova pump-action shotgun was big news last year at a company that formerly built only autoloaders. But now, Benelli has refocused on autoloaders with its new left-hand versions of their proven inertia recoil M1 autoloader. These 12-gauge guns feature black and camouflage synthetic stocks, with barrels from 24 to 28 inches.

Small shooters will like the short stocked Montefeltro 20-gauge autoloader in satin walnut and blued steel. The guns can handle 2 3/4- or 3-inch magnum shells.

Benelli's Franchi division is also accommodating small shooters with its AL48 Short Stock autoloader in which the barrel recoils into the action, absorbing much of the kick. This design has been proven for more than fifty years. An aluminum receiver keeps this 20-gauge's weight at 5.5 pounds with 26-inch barrel, making it a gentle, quick-handling gun. It handles 2 3/4-inch shells.

Franchi has a gas-operated autoloader whose unique piston and spring surrounding the magazine tube can adapt to widely variable pressures. It's a proven, soft-shooting action beloved by many, and this year Franchi engineers have wrapped a smaller stock around it in 20-gauge. The Variopress 620 Short Stock weighs just 5.9 pounds and digests 3-inch magnums.

While Franchi is justly famous for autoloaders, it's now building the over/under Alcione field gun. This year an alloy receiver in the LF models, 12- and 20-gauge, brings total weight down to 6.9 to 6.7 pounds, respectively. Gold-inlay game birds in an etched silver receiver contrast nicely with the dark walnut stocks and blued barrels.

Beretta, the world's oldest firearms manufacturer, publishes one of the most comprehensive catalogs in the industry. This year's wish book starts off with the classically beautiful Silver Hawk EL side-by-side. Both 12- and 20-gauge models can be had with fixed or chokes or tubes. New in the 12-gauge are longer, thinner Optima-Choke tubes for better patterns.

I hunted doves, pigeons and geese in Argentina last year, firing thousands of rounds of dirty, locally-made 12-gauge shells through a Model 390 that never missed a beat. Not one miss-fire, jam or glitch. Here, I thought, was the perfect autoloader. Silly me. Beretta has upgraded their flagship to create the slimmer AL391 Urika in an extensive variety of 12- and 20-gauge configurations. In addition to a slimmer grip and narrower fore-

Browning's first sideplate O/U in over a decade, the Citori Privilege combines the beauty of traditional high-grade guns with the rugged dependability needed for upland bird-hunting.

1987. The Supreme's low-profile action locks up solidly via two tapered pins that project forward from the receiver face into recesses on either side of the upper barrel. The lugs self-tighten as the gun wears. For now, two models are offered: Field and Sporting. The Field is basic blue and walnut with vent rib, pistol grip, grooved fore-end, 28-inch, back-bored barrel chambered 3-inch, Invector Plus chokes and light engraving that includes a well-done pheasant. The Sporting has 28- or 30-inch barrels, Invector Plus chokes, 2 3/4-inch chamber, silver receiver and adjustable trigger shoe to customize length of pull. I had the pleasure of shooting the Field model, and I was dusting clays from the first shot.

The Winchester Super X2 autoloader, which made a big splash of its own a couple of years back, gets outfitted with 3 1/2-inch chamber, 24-inch barrel, TRUGLO fiber optic open sights, composite stock and Mossy Oak Break Up camouflaged finish. Similar treatment on the Model 1300 with 3-inch chamber makes it the Turkey pump-gun in Winchester's line.

I had an opportunity to run several new *Weatherby* guns through a Pennsylvania sporting clays course and skeet range 18 months ago and found them as well built as their rifles. For 2000 the SAS (Semi-Automatic Shotgun) comes dressed in three new outfits. The Synthetic wears a basic black stock, making it a rugged, all-round workhorse for everything from ducks to turkeys, although the 26- through 30-inch barrels put it more solidly into the waterfowling category. The Shadow Grass-finished synthetic SAS is another obvious duck gun, this one with 26- or 28-inch tube. Finally, the Superflage with 24- or 26-inch barrel and M.L. Lynch Superflage camo pattern is an out and out turkey special. The SAS is built around a self-compensating gas recoil system and will digest loads up to 3-inch magnum. Five Briley stainless steel choke tubes come standard. Guns weigh from 6 to 7 3/4 pounds.

New nontoxic loads include Federal's Premium Tungsten-Polymer and below: Kent Cartridge's Impact Tungsten Matrix, now available in a 3-inch, 12-gauge shell.

Ammunition

Italian manufacturer *Baschiere & Pellagri* has been building tournament winning shotshells since 1891 and is now marketing aggressively in the U.S. via B&P America. New this year is the 1-ounce F2 Ultra Velocity 12-gauge Sporting Clays load with high antimony, highly polished 7 1/2 shot in the Gordon System hull configuration. This is a straight-wall hull with separate plastic base that holds the primer, cushions ignition forces via dampening "springs," and serves as the powder base wad. The new loads are rated at 1400 fps and reportedly pattern beautifully. B&P also builds a variety of other 12-, 16- and 20-gauge shells in the Gordon System hull. A new Extra Rossa 28-gauge load featuring 3/4-ounce polished 7 1/2- or 8 shot at 1230 fps will be available soon.

If European names confuse you, hang onto your hat. *Dynamit Nobel-RWS Inc.* in Cloister, New Jersey, include RWS rimfire and centerfire cartridges, Norma cartridges, Rottweil Brenneke slug shells, and Rottweil (no Brenneke this time) shotshells. We concern ourselves here with the Rottweil Sport and Rottweil Game shotshells. Target loads include 12-gauge 2 3/4-dram, 1 1/8-ounce in 7 1/2, 8 and 9 shot sizes; 12-gauge 3 1/4-dram, 1 1/8-ounce in the same shot sizes. Game loads include a 12-gauge 3 1/4-dram, 1-ounce in 7 1/2, 8 and 9 shot; a 12-gauge 3 3/4-dram, 1 1/4-ounce in 6 and 7 1/2 shot; and a 20-gauge 2 1/2-dram, 7/8 ounce in 6, 7 1/2, 8 and 9 shot. As you'd expect from a venerable German firm that produces world-class target .22 ammunition, these shotshells are precision designed and manufactured to the highest standards.

Kent Cartridge of America has grown quickly from the firm foundation of its parent company in Canada and is now producing innovative American-style shotshells for everything from turkeys to quail.

Kent's new nontoxic Impact Tungsten Matrix line, in particular, has been embraced by waterfowlers. I've tried it and gotten impressive results on ducks and geese, in addition to pheasants. This year a new 3-inch 12-gauge shell has been added to the stable. It carries 2 ounces of shot in sizes 1 and 3 with velocity at 1260 fps. To accommodate upland hunters in nontoxic shot zones, Kent offers Tungsten Matrix in Impact

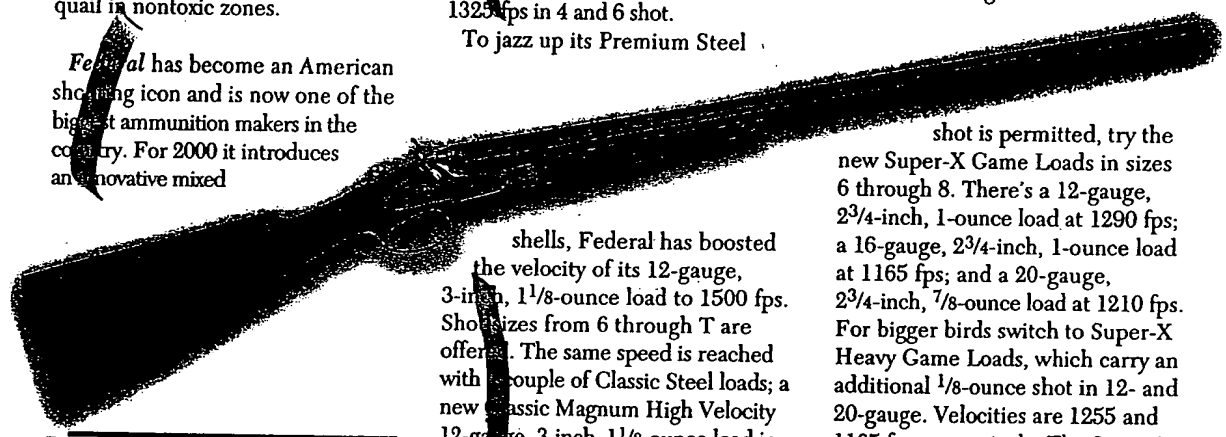
Pheasant/Game loads. Joining the 12- and 20-gauge loads already in the line are two new 16-gauge shells: a 1-ounce in 6-shot and a 1-ounce in 5-shot. These will please shooters of Sweet 16s, old Model 12s in 16-gauge and plenty of old side-by-sides.

Turkey hunters get a new 3 1/2-inch 12-gauge Diamond Shot Lead Turkey in 4, 5 and 6 shot. There are 3-inch and 2 3/4-inch shells in the line, too, plus a 20-gauge 3-inch shell. There's also a new 1 1/4-ounce, 2 3/4-ounce, 12-gauge Pigeon Load in the Diamond line and 6-shot has been added to several 12-gauge loads in the Fasteel line, another good choice for upland birds like quail in nontoxic zones.

Federal has become an American shooting icon and is now one of the biggest ammunition makers in the country. For 2000 it introduces an innovative mixed payload of #2 steel and #4 Tungsten-Iron pellets in a 3-inch 12-gauge shell. The idea is to provide a dense pattern at close range with sufficient energy left in the tungsten pellets for long-range punch. The lighter weight of the steel pellets enables a high initial velocity of 1400 fps. Total payload weight is 1 1/4-ounces.

Federal's Premium Tungsten-Polymer loads are billed as a nontoxic replacement for lead since the pellets have the same density as lead pellets of the same size. Because these pellets can be formed in small sizes, they are loaded in shells geared toward upland birds and ducks over decoys. New loads this year include 10-gauge, 3 1/2-inch, 1 3/4-ounce, 1325 fps in 4 and 6 shot.

To jazz up its Premium Steel shells, Federal has boosted the velocity of its 12-gauge, 3-inch, 1 1/8-ounce load to 1500 fps. Shot sizes from 6 through T are offered. The same speed is reached with a couple of Classic Steel loads; a new Classic Magnum High Velocity 12-gauge, 3-inch, 1 1/8-ounce load in most shot sizes including 3; and a 12-gauge, 2 3/4-ounce, 1-ounce High Velocity Upland Steel load in 3, 4, 6 and 7 shot. Anyone with chronic "shot behind" syndrome might benefit from these speedy loads. I believe they are the fastest bird-shot loads on the market.



This elegantly crafted Juno is among a number of top-quality hammer-guns being imported by New England Arms in Kittery Point, Maine. Below: Dynamit Nobel-RWS Inc. offers this Rottweil Super Game load in several 12- and 20-gauge configurations.

All new in the Classic Magnum High Velocity Steel line-up are a 12-gauge, 2-inch, 1 1/8-ounce, 1450 fps load in 6-through BB, and a 20-gauge, 3-inch, 1-ounce, 1400 fps load in 2, 3 and 4 for waterfowl and pheasant.

The familiar name of *Winchester* is attached to a bunch of new shotshells this year, but the Xpert Steel line is making the biggest splash due to its low price. Thanks to an exclusive, faster, less expensive steel pellet manufacturing technique, Winchester can sell its Xpert shells for about 30 percent less than traditional steel loads. Right now you can find both Upland/Target and Heavy Upland/Waterfowl Xpert loads in 12-gauge 2 3/4- and 3-inch and 20-gauge 2 3/4-inch shells in shot sizes 7, 6, 4 and 2. All velocities are 1300 fps. I shot some of the 2 3/4-inch 12-gauge Xperts in 7 shot at big Argentine pigeons and was duly impressed with their speed and punch. These are great loads for volume shooting in nontoxic zones and should be great for pheasants.

When high-volume shooting for doves or small game where lead shot is permitted, try the new Super-X Game Loads in sizes 6 through 8. There's a 12-gauge, 2 3/4-inch, 1-ounce load at 1290 fps; a 16-gauge, 2 3/4-inch, 1-ounce load at 1165 fps; and a 20-gauge, 2 3/4-inch, 7/8-ounce load at 1210 fps. For bigger birds switch to Super-X Heavy Game Loads, which carry an additional 1/8-ounce shot in 12- and 20-gauge. Velocities are 1255 and 1165 fps respectively. The Super-X Heavy Field Load in 12-gauge sports 1 1/4 ounces of shot at 1220 fps in a 2 3/4-inch shell.

The all-new Winchester Supreme High Velocity Field Loads are designed for long-range efficiency. Loads include 12-gauge, 2 3/4-inch, 1 1/4-ounce, 1400 fps in 4, 6 and 7 1/2; 20-gauge, 2 3/4-inch, 1-ounce, 1300 fps in 4, 6 and 7 1/2.

Duck and goose hunters get new payload options in the Supreme High Velocity Drylock Super Steel Non-Toxic Waterfowl loads. The 3 1/2-inch 10-gauge gets 2-shot; the 3 1/2-inch 12-gauge gets 3-shot and BBB; and the 3-inch 12-gauge gets 3- and 4-shot. All these loads are rated at 1450 fps, so they're real screamers that should alleviate some of those "shot behind 'em" woes.